MONTHLY

JOURNAL OF AGRICULTURE.

VOL. I. JUNE, 1846. NO. 12.

BRIEF SKETCH OF THE LIFE AND WRITINGS OF JOHN CLAUDIUS LOUDON.

In giving a Portrait, with some particulars of the life and writings, of the late JOHN CLAUDIUS LOUDON—taken from the Journal of the Highland Agricultural Society—we are aware that we lay ourselves liable to the imputation of giving too much of foreign impress and character to a work designed for American agriculturists. But, again, we take justification and comfort in the belief that every reader of reflection will say to himself, "What care I to what country the subject of a memoir belongs, if the man whose worth it commemorates was highly distinguished for useful talents and such exemplary virtues as every gentleman who lives in the country and gives his time to its pleasures and pursuits, should aim to possess for himself and to cultivate in his sons? Give me, says such a reader, for the emulation and benefit of the rising generation, the particulars of the lives and fortunes, not of your successful political partisans and heroes, great or small, but of that more truly noble and useful order of men, of whatever clime or country, who, like LOUDON, have evinced, even in the dawn of their career, an auspicious fondness for the arts of cultivating the earth, and a taste for its floral and horticultural embellishment; and whose maturer labors in the closet and the field have all tended to enlighten the practice and multiply the fruits of peaceful industry!

In treating of Experimental Agriculture, and in recommending particular staples, implements or processes, every man of common sense knows that the Editor of a journal dedicated to these purposes, must have regard to *circumstances*. It needs no ghost from the grave to tell us that, in drawing upon English, or French, or German, or other foreign works, for discoveries that may be useful in the practice of American husbandry, constant reference must be had to difference in the climate, in the price of labor, in the condition of the landholder, in the habits of the people, and the tastes and means of the consumers. Thus, for example, every one knows, as to climate, that ours is not adapted to a profitable culture of the pine-apple, or the banana—and hence we do not draw upon English horticultural works that abound in dissertations on the growth of "pines," as they call them; yet *there* such dissertations are not out of place, because there reference is had again to the condition and means of an opulent aristocracy, who, while thousands of their countrymen languish and perish for want of their "daily bread," which neither labor nor prayers in or out of church can procure, load their own tables with exotics, the pampered and luxurious fruits of an artificial climate. Even the turnip of England, in that country the subject of so much labor and the theme of so much disquisition—which is said even to constitute their meat and their manure—attracts less and would less reward attention in this country, because we are deficient in the moisture that is indispensable to the uniform production of heavy and remunerating crops.—All this, we repeat, every tyro must know; and, in the conduct of the journal committed to our care, we have failed not, and shall not fail, to bear these obvious considerations in mind. But does it follow that we should read with less interest, or exhibit the less earnestly, the lives of such men as LOUDON, whose thoughts and labors were employed in a manner to diffuse throughout the world a knowledge of the prin-

ciples of culture, and of a refined taste in rural architecture and plantations of trees and flowers? As to this feature in the plan of the FARMERS' LIBRARY, it has always commended itself in an especial manner to our esteem, by the hope which it holds out that in this way we may stimulate our young farmers, who are coming on, to emulate the knowledge and the diligence of those whose lives are thus commemorated; and hence we here announce with the greater pleasure that, with a liberality well befitting the inheritor of his partialities, his fortune and his virtues, the son of the late JAMES WADSWORTH has caused to be supplied, for the FARMERS' LIBRARY, a well executed portrait of his father, from the easel and the graver of two of the most eminent artists of the day.—This we shall give in the July Number, there to await the coming memoir, if we should not have the good fortune to receive that in time to accompany the likeness.

We had hoped that such likenesses and memoirs would adorn our pages at least every alternate month, but, strange to say, of such quiet and useful citizens few portraits are to be found; and their descendants seem to be too insensible to the importance of holding them up as shining lights to the rising generation, and to the obligation which devolves on them, to aid us in doing it—so that it may happen that

"Even in their ashes shall live their wonted fires."

We have been encouraged to hope that we shall be enabled to preserve memorials, in this way, of two eminent agriculturists of the South—one an early and powerful writer on Southern Agriculture; the other a well known, bold and enterprising pioneer in the cultivation of the two great staples that constitute so large a portion of our national wealth—but there has been so much backwardness—we have been so much disappointed already on this point—that we are chary of making promises for the future; avowing here, once for all, the readiness of the Editor and the liberality of the Publishers to do their part.

Were they military heroes, instead of peaceful cultivators of wool and bread "to feed the hungry and to clothe the naked," we should have no difficulty. Governments and City Corporations would eagerly ask, "*Will you do us the honor to sit for your likeness?*" But what Society or Public Authority seeks to procure and display in its halls the likenesses of such men as PICKERING and LOWELL, of Mass.; and Chancellor LIVINGSTON, and BUEL, of New-York; and SINGLETON, and LLOYD, and MOORE, of Maryland; and TAYLOR and GARNETT, of Virginia; and PINKNEY and HAMPTON, of South Carolina? Ay! as if to quicken the spirit of this inquiry, at the very moment of writing thus far, and pausing to open a letter from Utica—a gentleman there, in perfect sympathy with our own feelings, referring to the scheme of a great Library at Washington as the prominent feature of the bill to establish the Smithsonian Institution, despondingly remarks: "For one I have almost despaired of ever seeing our Government, which is said to be based upon the intelligence of the People, do anything of moment for promoting, in an efficient way, a knowledge of those pursuits which tend to *Virtue* and *Peace*. Army and Navy! Texas and Oregon! cannon and muskets! shooting deserters! &c. God have mercy upon us!"—And so we say, amen!

If, however, while we thus profess, and offer to give, decided preference to those whose memoirs would illustrate the agricultural annals of our own country, there be any who would insinuate that, in holding up as models to young Americans the lives and labors of foreigners, which we find prepared to our hand in the transactions of enlightened and public spirited European Societies, we are betraying an anti-American spirit, or fostering a sentiment of homage to men or to things foreign, because they are foreign, we shall only say that we hold all such suspicions in contempt, and repose confidently on the good sense of more liberal and judicious readers. As Editor and as individual we hold all countries to be alike—enemies in war; in peace, friends—except that we pretend not to be above that natural, not to say filial, impulse which leads every one, we suppose, to refer with peculiar pleasure, when it can be done with justice, to the country of his ancestors for examples of all that is most worthy of imitation and rivalry in arts that most contribute to rural embellishment and felicity—arts by which such men as REPTON, and LOUDON, and AUDUBON, and DOWNING, have contrived to open some fountains and to plant some green spots along the dreary journey of life.

In this case, we should think the space allotted to these extracts from the life of LOUDON well appropriated, did it serve only to exemplify the conjugal devotion of the author, and the share, however humble, which she faithfully performed in the preparation of works which have done so much to open the mind and the heart of the world to the true principles of taste and the countless beauties of Nature.

To the last moment she stood by the husband whom she had taken "for better, for worse," as well in sickness as in health—assisting him, night and day, in his Herculean labors, until that awful crisis for a wife, when, to use her own words, "I had just time to clasp my arms around him, to save him from falling, when his head sank upon my shoulder, and he was no more."

Supposing, then, the subject and the details to be appropriate, who would think of asking, with any view of detraction from their merits, to what country did such fellow laborers in the great vineyard of public usefulness belong?

JOHN CLAUDIUS LOUDON was born at Cambuslang, in Lanarkshire, on the 8th April, 1783. His father was a farmer, and resided, at the time the subject of this notice was born, at Kerse Hall, near Gogar, in the vicinity of Edinburgh. Young Loudon showed an inclination for gardening when very young, and his greatest pleasure, during his early boyhood, was in making walks and beds, and rearing plants in his father's garden. Anxious to obtain for him the advantages of a liberal education, his father sent him to Edinburgh for the purpose of attending the public schools. Here he acquired some knowledge of classical learning, for which he had shown a strong repugnance, and made himself acquainted with French and Italian. Drawing was at this period his favorite pursuit, and in this he made such proficiency that he was qualified at an early age to become draughtsman and assistant to Mr. John Mawer, at East Dalry, near Edinburgh. He subsequently resided for several years with Mr. Dickson, nurseryman in Leith Walk, and during that time he attended classes on Botany, Chemistry, and Agriculture, in the Edinburgh University. He was noticed at this time for the diligence with which he prosecuted every branch of study on which he entered. Such was his desire of improvement that he regularly sat up two nights every week to study, drinking strong green tea to keep himself awake. This practice he continued for many years.

He repaired to London in 1803, and began to occupy himself professionally as a landscape gardener. In this he was eminently successful, finding abundance of employment in many different parts of England. Through the influence, probably, of Sir Joseph Banks, who always continued to be his warm friend, at whose house he occasionally met most of the scientific men of the day, he was early elected a member of the Linnean Society. Mr. Loudon's first work appears to have been suggested to him while employed in Scotland, in 1804, laying out grounds for various noblemen and gentlemen—in particular, the Earl of Mansfield, who was then altering and improving the palace gardens at Scone. The book alluded to was entitled—"Observations on the Formation and Management of Useful and Ornamental Plantations, on the Theory and Practice of Landscape Gardening, and on Gaining and Embanking Land from Rivers or the Sea." This work was published in Edinburgh by Constable & Co., and by Longman & Co. London, with the latter of whom Mr. Loudon continued to transact business of this kind for nearly forty years. This was succeeded, in 1805, by another publication, entitled—"A Short Treatise on some Improvements lately made in Hot-houses." A more important work than either of these appeared on the following year, ornamented by some elegant copper-plate engravings of landscape scenery.—This was his "Treatise on Forming, Improving and Managing Country Residences, and on the Choice of Situations appropriate to every class of Purchasers, &c."

The year 1806 was marked by an occurrence which proved a source of great annoyance to Mr. Loudon, not only at the time it happened, but during the whole of the remainder of his life. While traveling in Wales, he caught a violent cold by being exposed all night on the top of a coach to the rain; this brought on rheumatic fever, which finally settled in his left knee, and, from improper medical treatment, terminated in a stiff joint. While suffering under the immediate effects of this calamity, which befell him in the prime of his days and the vigor of his power, his mental energy continued unabated; he painted landscapes, learned German—paying his expenses, as he had done before when he learned French, by selling for publication a pamphlet he had translated by way of exercise; he also took lessons in Greek and Hebrew. A farm called Wood-Hall, where he stayed during his illness, being to let, he induced his father to rent it, with a view of improving the state of husbandry, which was then in a wretched state in many parts of England. The attention he was thus led to pay to Agriculture was the means of inducing him to embody his opinions on this subject in a pamphlet published in 1808, entitled—"An Immediate and Effectual Mode of Raising the Rental of the Landed Property of England, and rendering Great Britain Independent of other Nations for a Supply of Bread-corn." He afterward took another farm, called Great Tew, not far from Oxford, where he established a kind of agricultural college for the instruction of young men in agricultural pursuits, being desirous of securing a permanent source of income, in case his anchylosed knee should prevent him carrying on his favorite pursuit of landscape gardening. In 1809 he published a pamphlet, giving an account of this institution, and pointing out the utility of agricultural knowledge to the sons of the landed proprietors of England, and to young men intended for estate agents.

By the exercise of his profession as a landscape gardener, diligently prosecuted, not only in England and Scotland, but also in Wales and Ireland, Mr. Loudon had amassed a considerable sum of money—upward of £15,000; and when the Continent was thrown open to English visitors, by the general rising against Bonaparte in 1803, he resolved to relax his exertions for a time, and gratify his ardent thirst for knowledge by traveling abroad. He accordingly repaired to Sweden, Prussia, Austria, and Russia; visited the two capitals of the latter country—arriving at Moscow on the 4th of March, 1814, while the buildings were yet black with the famous conflagration. Of the various difficulties he encountered on the road, we may mention the following:

"Once the horses in his carriage, being unable to drag it through the snow-drift, the postillions very coolly unharnessed them and trotted off, telling him that they would bring fresh horses in the morning, and that he would be in no danger from the wolves, if he would keep the windows of the carriage close, and the leathern curtains down. There was no remedy but to submit; and few men were better fitted by Nature for bearing the horrors of such a night than Mr. Loudon, from his natural calmness and patient endurance of difficulties. He often, however, spoke of the situation he was in, particularly when he heard the howling of the wolves, and once when a herd of them rushed across the road close to his carriage. He had also some doubts whether the postillions would be able to recollect where they had left the carriage, as

the wind had been very high during the night, and had blown the snow through the crevices in the curtains. The morning, however, brought the postillions with fresh horses, and the remainder of the journey was passed without any difficulty."—p. 23.

After his return from the Continent, he unfortunately embarked in mercantile speculations, and underwriting ships at Lloyd's, by which he lost nearly the whole of the money he had accumulated by his professional labors. About this time his health began to be seriously impaired, and he took a house at Bayswater, called the Hermitage, with a large garden annexed, which continued to be his residence till his death. He now seems to have devoted his time chiefly to his pen. He projected his "Encyclopedia of Gardening," and, in order to collect materials, visited France and Italy, although his health was at this time in a very precarious state. This well known work appeared in 1822; it had an extraordinary sale, and fully established the literary fame of its author. In 1825, the "Encyclopedia of Agriculture" was written and published. The preparation of these laborious works in such rapid succession (for a second edition of the "Encyclopedia of Gardening," almost wholly re-written, appeared in 1824), speak strongly to the indomitable energy of his mind; for his bodily health was at this time in a lamentable state. His right arm had been broken a second time, and he suffered so severely from the pain, that he found no ease but from the use of laudanum, to which he became at last so habituated, that he took *a wine glassful every eight hours*. After the amputation of his arm, however, he speedily cured himself of this dangerous habit without experiencing any inconvenience.

The "Gardener's Magazine," a work with which his name is more particularly associated in the minds of the practical gardeners of this country, was established in 1826. This was his favorite work, the organ through which he communicated his own thoughts and feelings to the public. It met with a most favorable reception, 4,000 copies of the first number having been sold in a few days, and it continued to enjoy a high degree of popularity till its close at the death of the conductor. Two years afterward he began the "Magazine of Natural History," the first work of the kind, we believe, ever published in this country. It also was favorably received, and had a considerable sale.

The writer of the memoir from which these memoirs are extracted, describes the occasion of her first introduction to Mr. Loudon. This she must be permitted to do in her own words:

"My father died in 1824, and finding, on the winding up of his affairs, that it would be necessary for me to do something for my support, I had written a strange and wild novel called "The Mummy," in which I had laid the scene in the twenty-second century, and attempted to predict the state of improvement to which this country might arrive. Mr. Loudon chanced to see the review of this work in the *Literary Gazette*, and as, among other things, I had mentioned a steam-plow, it attracted his attention, and he procured the work from a circulating library. He read it, and was so much pleased with it, that he published, in the Gardener's Magazine for 1828, a notice of it under the head of "Hints for Improvement;" and he had from that time a great desire to become acquainted with the author, whom he supposed to be a man. In February, 1830, Mr. Loudon chanced to mention this wish to a lady, a friend of his, who happened to be acquainted with me, and who immediately invited him to a party, where she promised him he should have the wished-for introduction. It may be easily supposed that he was surprised to find the author of the work a woman; but I believe from that evening he formed an attachment to me, and, in fact, we were married on the 14th of the following September."—p. 35.

But our space will not permit us to enter much farther into details, nor even to indicate all the works which he laid before the public. In 1832 he commenced his "Encyclopedia of Cottage, Farm and Villa Architecture"—one of the most useful of all his productions. In the preparation of this work his wife acted as his sole amanuensis; and for several months he and she used to sit up the greater part of every night, never having more than four hours' sleep, and drinking strong coffee to keep themselves awake. This work was published on the author's own account; and the great success that attended it tempted him to publish the "Arboretum Britannicum" in the same manner. This latter undertaking gradually expanded under his hands, and it was his determination to make it as perfect as possible that involved him in the pecuniary difficulties which, to all appearance, hastened his death. As all the drawings of trees for the "Arboretum" were made from Nature, he had seven artists constantly employed, and he was frequently in the open air with them from his breakfast at seven in the morning, till he came home to dinner at eight in the evening, having remained the whole of that time without taking any refreshment, and generally without even sitting down. After dinner he resumed the literary part of the work, and continued writing, along with his wife as his amanuensis, till two or three o'clock in the morning. He had three other monthly works besides the "Arboretum" going on at the same time. During this period of extraordinary exertion, both of mind and body, he was suffering under what was supposed to be a liver complaint, and an enormous swelling in his right knee. When the "Arboretum" was completed, he found that he owed *ten thousand pounds* to the printer, stationer, and wood-engraver, who had been employed in the undertaking. The work, along with "Cottage Architecture," was placed in the hands of Messrs. Longman &Co., to hold for the creditors till the debt should be paid by the sale.

Subseqently to this period, Mr. Loudon visited France and Scotland. While in the latter country he was seized with a severe bilious fever.—On his recovery he visited various places in the southern division of the country, carefully examining the principal gardens, and making notes of all he saw. On his return to England, the first number of the "Encyclopedia of Trees and Shrubs" made its appearance; and, in 1843, his work on "Cemeteries," on which he bestowed much pains, and which was very expensive, owing to the number of engravings. Mr. Loudon had an attack of inflammation in the lungs on two different occasions. In 1843 his lungs again became diseased, and that so seriously, that he appears by the end of September in that year to have lost hope of ultimate recovery. Even in these circumstances he labored almost night and day to finish the works he had on hand; and that, too, notwithstanding the agitation attendant on the numerous letters and consultations

respecting his pecuniary affairs. On the 13th of December

"He appeared very ill," (says his widow), "and told me he thought he should never live to finish 'Self Instruction,' but that he would ask his friend Dr. Jamieson, to whom he had previously spoken on the subject, to finish the work for him. Soon after this he became very restless, and walked several times from the drawing-room to his bedroom and back again. I feel that I cannot continue the melancholy details: it is sufficient to say that, though his body became weaker every moment, his mind retained all its vigor to the last, and that he died standing on his feet. Fortunately, I perceived a change taking place in his countenance, and I had just time to clasp my arms round him, to save him from falling, when his head sank upon my shoulder and he was no more.

"I do not attempt to give any description of the talents or character of my late husband as an author; his works are before the world, and by them he will be judged; but I trust I may be excused for adding, that in his private capacity he was equally estimable as a husband and a father, and as a master and a friend. He was also a most dutiful son and most affectionate brother.

"It was on the anniversary of the death of Washington (the 14th of December) that Mr. Loudon died, and he was buried, on the 21st of December, in the cemetery at Kensall Green. When the coffin was lowered into the grave, a stranger stepped forward from the crowd and threw in a few strips of ivy. This person, I was afterward informed, was an artificial flower maker, who felt grateful to Mr. Loudon for having given him, though a stranger, tickets for admission to the Horticultural Gardens, and who, having never been able to thank Mr. Loudon in person, took this means of paying a tribute to his memory.

What remains is taken from some anecdotes of Mr. Loudon, communicated for an English paper, by a young man who had lived with him many years as draughtsman. After giving instances to show his strict love of truth and his personal determination, he adds, as to his love of *order*—which we the rather publish from always having felt the want of it:

"His love of order was also very great. The books in the library, and manuscripts in his study were so arranged that he could at any time put his hand upon any book or paper that he might want, even in the dark. He instilled this system of order into the minds of his clerks too; for, when any new one came, his invariable instructions were—'Put everything away before you leave at night, as if you never intended to return.'

"He was also a man of great punctuality as to time, money matters, and in every other respect. When any of his clerks happened to be behind time in the morning, he would take no notice for a few times; but, if it were often repeated, he would say very quietly but sarcastically—'Oh, if 9 o'clock is too early for you, you had better come at 11 or 12; but let there just be a fixed hour, that I may depend upon you.'

"Mr. Loudon was a man of great fortitude and unwearied industry. The morning that Doctors Thompson and Lauder called upon him for the purpose of amputating his right arm, they met him in the garden, and asked if he had fully made up his mind to undergo the operation. 'Oh, yes, certainly,' he said; 'it was for that purpose I sent for you;' and added very coolly, 'but you had better step in, and just have a little lunch first before you begin.' After lunch he walked up stairs quite composedly, talking to the doctors on general subjects. When all the ligatures were tied, and everything complete, he was about to step down stairs, as a matter of course, to go on with his business; and the doctors had great difficulty to prevail upon him to go to bed.

"As a man of industry, he was not surpassed by any one. Deducting for the time he has been poorly, he has, during three-fourths of his literary career, dictated about five and a half printed octavo pages of matter every day on an average. He has been frequently known to dictate to two amanuenses at the same time. He often used to work until 11 and 12 o'clock at night, and sometimes all night. It may not be amiss to mention here, as illustrative of his love of labor, that, while his man-servant was dressing him for church on the day of his marriage, he was actually dictating to his amanuensis the whole time.

"Although Mr. Loudon was a matter-of-fact man, he had nevertheless a good deal of poetry in his soul. The writer happened to dine with him the day that he attended Dr. Southwood Smith's Anatomical Lecture on the body of his friend Jeremy Bentham. Just at the moment the lecturer withdrew the covering from the face of the corpse, the lightning flashed, and an awful burst of thunder pealed forth—

'Crush'd horrible, convulsing heaven and earth!'

Mr. Loudon, during dinner, gave a most touching, poetical, and graphic description of the lecture, and the circumstances attending it; and every one present could see how deeply he felt the loss of his friend Bentham.

"Mr. Loudon was a man, like most good men, rather easily imposed upon. He, contrary to the ways of the world, looked upon every man as a good man until he had proved him otherwise; but when he had done so, he was firm in his purpose. He was a warm friend, an excellent husband, an amiable brother, and a most affectionate and dutiful son. Altogether

'He was a man, take him for all in all,
We shall not look upon his like again.'

—

"ELEGY.

"HARK! hark! the sound—'tis a funeral knell
Borne on the breath of day—
The mournful voice of the deep-toned bell—
For a spirit has winged his way.

'Tis not the man of wealth and state
That the world has now to mourn;
'Tis not the man that gold makes great
Who now to the tomb is borne.

No! no! we grieve in the friend now gone,
No flattering slave of state;
But the world has lost by the death of one
Whose mind was truly great.

He wielded no sword in his country's cause,
But his pen was never still;
He studied each form of Nature's laws,
To lessen each human ill.

That voice is hushed!—and lost the sound
Employed to raise the poor;
But the echo shall, by his works, be found
To reach the rich man's door.

He wakes no more!—for the sleep of death
Encircles the earthly frame;
But the mind—so strong while it dwelt on earth—
Secured a living fame.

Chatsworth.

His pen is still!—and his spirit fled
To brighten a world on high:
The cold, cold earth is his lowly bed;
But his *name* shall never die!

J R."

THE SMITHSONIAN INSTITUTION;

THE INTERESTS AND RIGHTS OF AGRICULTURE NEGLECTED—AS USUAL.

UTICA, N. Y. May 11, 1846.

DEAR SIR: In the March number of the FARMERS' LIBRARY you made a few remarks upon the proposed "Smithsonian Institution," which I heartily approve of. Having taken a deep interest in this matter, I addressed to Hon. ROBERT DALE OWEN, the Chairman of the Select Committee of the House of Representatives, a letter, of which the accompanying is a copy. It proposes a plan somewhat different from any that I am aware of. I send it to you merely for your perusal, and not for publication, unless you deem it worthy, which I do not. For one, I have almost despaired of ever seeing our Government—which is said to be based upon the intelligence of the people—do any thing of moment for promoting in an efficient way a knowledge of those pursuits which tend to virtue and peace. Army and Navy—Texas and Oregon—cannon and muskets—shooting deserters, &c. &c.—God have mercy upon us!

I must confess my disappointment with the action of the House of Representatives upon this subject. How a great Library will tend to promote and diffuse knowledge among men to any great extent, I cannot perceive. To the dwellers in the Capital it may be useful, but to the country at large entirely valueless.

I should like to have your opinion of the proposed plan for a "Farm School," and whether there are any hopes left of ever having one

Very truly, your ob't serv't,
JAMES REES.

J. S. SKINNER, Esq.

UTICA, N. Y., April 11, 1846.

DEAR SIR: I have to acknowledge the receipt from you of a copy of the Report of the Select Committee on the "Smithsonian Institution." More pressing duties have prevented an earlier communication, according to my promise. I trust, however, that it is not too late now.

It was my intention to offer to the Committee a few considerations on the claims of Agriculture in connection with the application of the Smithson Fund; but I find this done so much better than I could do it—by J. W. HARDY, of Virginia, in the March number of Skinner's "FARMERS' LIBRARY AND MONTHLY JOURNAL OF AGRICULTURE"—that I will forbear. I beg leave to refer you to that publication.

Upon the details of an extended system "for the increase and diffusion of knowledge among men," I desire to offer a few thoughts.

With the main features of the reported bill, that is, the Institution to be created, I am well pleased—considering them to be more in accordance with the designs of the donor than any others previously proposed. I must, however, frankly confess my disappointment with the *meagerness* of that portion relating to *Agriculture*. It is, I apprehend, far short of what the interests and well-being of our country demand.

The bill provides for the appropriation of a lot of ground in the City of Washington "for Horticultural and Agricultural purposes and experiments." I do not know how large this lot may be; but I suppose it contains no more than 50 or 60 acres. This would be, I fear, much too small for the purposes designed and the successful conducting of the Institution. With the constant and increasing additions of rare plants, &c. which may reasonably be expected, the whole would soon be entirely occupied, leaving no room for active operations. It would thus become a mere *garden*, offering at best but few facilities for the acquisition of practical knowledge in the sciences named in the bill. Take, for instance, that branch of farm-science relating to manures. This is a subject of acknowledged importance. It requires a great amount of practical knowledge to know, of a certainty, the kind, amount, &c. to be successfully applied to different kinds of soils. The knowledge of Chemistry required is very different from what is to be obtained in the class and laboratory. *The open field must be studied.* For this purpose there must be room enough. A farm of sixty acres would be much too small for extended and satisfactory experiments in all kinds of farm and garden produce.

The Institution should be preëminently *agricultural*—in the most extensive and general use of that word. It should include the whole business of the farmer—which comprehends the cultivation of the soil, and *the management of live stock*. It ought also to include every description of territorial improvement, such as draining, embanking, road-making, planting, &c., all which are parts of the science of the soil. Any thing short of this would be unsatisfactory.

Again: Ample provision should be made by law for the reception of students in such a manner that the whole country may enjoy equally its benefits, and in such a way that the poor young men of the land may not be debarred from its privileges. As a body, the farmers of this country are not moneyed men. Money comes to them only by the most severe and constant labor, and then but slowly. They can but poorly afford to pay much for learning. It is

true, the bill proposes that the instruction of students shall be gratuitous; but it must be remembered that the necessary expenses for board, clothing, &c. would be more than 999 out of 1000 of the farmers of the country could possibly afford to pay. How, then, can this matter be so arranged that the poor man may feel encouraged to send his son to the "Farm School?" How can the charge which is so often made against institutions of this kind—that they are designed for the rich, and they only receive the benefits of them—be avoided?

These questions bring me to the plan which I wish to propose. I will give but a mere outline, and that as brief as possible.

In the first place, the farm should contain at least 1200 or 1500 acres. It should be—for convenient to market, procuring of manures, &c., located near a large city—say within five miles. A portion of this land should be applied to horticultural purposes. This large tract of land I conceive to be indispensably necessary for the purposes of the Institution. It would furnish full room for sufficient experiments with all kinds of grains, roots, fruits, grasses, manures, &c.—not merely with a handful of each, the results of which can never be confidently relied upon—but with bushels, thus testing at once the worth of an article presented. It would furnish ample room for the rearing and keeping of all kinds of farm stock, such as horses, cattle, sheep, swine, poultry, &c. of all the different breeds and crosses. Here, too, would be full room for all the details and out-door labor of the farmer, with opportunity for testing all machines and improvements designed to facilitate his labors.

Here, then, upon this domain, would be collected the best of every thing that a farmer would wish to have upon his own land. Above all, here would be opportunity for the young man who wished to be a real farmer, to make himself acquainted with the whole science, from its most intricate mysteries down to the minutest details of every-day labor.

An extended system of exchanges of all farm produce, &c. should be kept up with foreign countries, and citizens of this country. Nothing which is the produce of the soil should be *given* away. An equivalent in kind or value to be returned in all cases. Of stock, none but the best being kept, an excellent opportunity would be always at hand for the purchase of such as any buyer might want.

Upon this domain should be erected the buildings of the Institution—convenient and large, but in plain, farmer-like style. The dwelling-house should be large enough to accommodate 500 students, with the Professors and their families. Another building located near the dwelling would be required for the Library, Laboratories, departments of Geology, Mineralogy, Natural History, study rooms, &c.

Ample provision in the way of acres, buildings, &c. being made, the number of students should be limited to twice the number of Representatives in Congress—that is, two shall be chosen by the Representative from each Congressional District in the Union. This plan gives the whole country an equal participation in the privileges of the Institution. The term for which students will enter should be two years. At the commencement of the first year, however, the students should be divided into two classes, one of which will leave at the end of the first year, the other to continue the full term. This plan of classing the students, by which one-half the aggregate number would be renewed every year, will prevent the embarrassment of entire new classes at the same time.

Each student should be allowed pay of a sufficient amount to meet the necessary expenses of a two-years' stay at the Institution, and also to serve as an encouragement to those who are poor, and who would otherwise be loth to avail themselves of the advantages of the Institution.

But, I think I hear you exclaim: This will cost too much; where is all the money to come from?

Briefly, I will tell you: The farm, buildings, &c. would in any case require a large outlay. The only difference between the bill and the plan which I propose, is the increased amount of land. The buildings, furniture, &c. would be nearly the same. The labor of the farm, such as fencing, ditching, preparing of ground for crops, harvesting, &c. would all be performed by the students. It may reasonably be expected that when fairly in operation, the produce of the farm would feed the Institution. I think that in a few years, with the farm fully stocked, soil improved, and a rigorous system of economy enforced, a considerable revenue would be obtained from sales.

If this be so, then the only demand for money would be to pay the salaries of officers and students. Assuming that the whole number of students would be 460, at a monthly pay, besides board, which would be furnished by the Institution, of $8, or $96 a year, the amount would be—

For students	$44,160
Professors, teachers, &c.	20,000
For Agricultural Department	$64,160
Estimated amount required for Normal School	41,880
Total	$106,040

Here there is an amount of $106,000 required annually for the support of the Smithsonian Institution; and a revenue of interest from the principal of the Fund of only $30,000, leaving a deficiency of $76,000. Whence can this amount be supplied? I answer, *From the general Treasury.*

Let us look at it for a moment. Congress is appropriating millions annually for the Army, Navy, &c. while occasionally it reluctantly gives a few hundreds for the furtherance of the peaceful Arts and Sciences. The Report of the Auditor of the Treasury shows that during the year ending June 30, 1845, there was expended under the direction of the War Department the sum of nine and a half millions, and by the Navy Department six and a quarter millions of dollars—making together, as the cost of sustaining the war machinery of our Government, the enormous sum of *fifteen and three-quarter millions.* Commerce, like the horse-leech, is constantly crying, "Give, give!" and the money is given. If asked for what purpose the money is required, the answer is, that the interests of the country demand it. It is said that by protecting commerce, the farmer and mechanic are also protected. Now, if this be so—and I will not dispute it—why not appropriate a portion of this money in a *direct way, for the benefit of the farmer and mechanic?* If the different branches of industry are so indissolubly connected with each other that one cannot be promoted without benefiting the other, then the commercial will be advanced in proportion to the extension of Agriculture and the useful Arts.

An expense was incurred during the last fiscal year of $143,000 for the Military Academy at West Point—the sole object and result of which institution is, in plain English, to teach men the best way to butcher their fellow-men. It is useless to find fault with this and kindred institutions. They will, in all probability, be sustained for a long time yet, until "nations shall learn war no more;" until they will learn that a better protection is afforded by the practiced principles of Truth and Justice, than by Armies and Navies. But I *do* complain that so little is done to promote the pursuits of peace and industry. Is it not high time that our course was changed in this matter? An opportunity is now offered: Will it be embraced? Will the Government niggardly refuse an appropriation of $80,000 to $100,000 a year, "to promote knowledge among men," while more than that sum is cheerfully granted to the West Point Academy? I hope not.

I have made an estimate above, for the Normal School. I will say a few words in explanation:

The object of this school, if I understand it correctly, is to prepare students for teaching. "It is not the design or province of a Normal School to communicate to its pupils the elementary departments of knowledge, but to perfect them in those departments, and, above all, to mould their habits, and discipline their minds in the art of teaching." "It is not expected that individuals will be received as members of this Institution who are not already acquainted with those departments of education which are usually taught in our schools. Their knowledge of all the elementary branches is here to be reviewed and made perfect; and in addition to this they will be carefully and practically exercised in the best modes of teaching all those branches." [Address of Hon. S. Young, on opening State Normal School. N. Y. State Senate, Dec. 24, 1845; p. 20.]

If this be the design, and I believe it is, the school should be located in the City, where experimental schools may easily be established, and also for convenience to students. I would then propose that a suitable building be erected in the City of Washington for the Normal School. The number of pupils to be the same as in the agricultural department, 460, and selected in the same manner. Three terms of 13 weeks each in a year, leaving a vacancy of about 30 days between each term. The pupils to remain during two terms, or 26 weeks, at a pay of $2 per week, without board. This, with $6000 allowed in my estimate for teachers' salaries, &c. would make up the amount above stated.

I will not detain you by reciting the advantages to be derived from such an establishment as I have endeavored to shadow forth; I will merely say, without any improper partiality for my own plans, that I can conceive of no more effective means for carrying into effect the designs of the donor. From this Institution there would graduate, every year, an army of enthusiastic scholars who have availed themselves of all the bounties which a great National University could give. They will spread themselves all over the Union. They have made themselves intimately acquainted with the works of Nature in their most attractive forms and purposes. They will become at once the "diffusers" of that which they have received.

One word, and I have done. The farmers and working-men of this country begin to think of their claims to a share of the bounties of Government; they will act ere long. The time is not far distant when, for every dollar appropriated to the purposes of the war establishment, there will be another dollar *demanded* for the works of peace and industry. Why not wisely begin now?

Commending the whole subject to the wisdom and patriotism of the Select Committee and Congress,

I am, very truly, your ob't serv't,
JAMES REES.

Hon. ROBERT DALE OWEN,
Ch'n Select. Com. on Smithsonian Institution.

Remarks by the Editor.

On the preceding we take leave to remark that we have never dared hope, with any degree of confidence, that the rare and glorious opportunity which this bequest of Smithson presents for the diffusion of *useful* knowledge would be availed of for the benefit of *Agriculture*, in any thing like the proportion which that interest bears when contrasted with them, to all others united. We should be greatly and agreeably disappointed if it be not altogether sequestered.

In a life-time filled with anxiety that the tillers of the soil should understand and make good their claim to paramount consideration in the legislation of the country, we have been but too well aware that lawgivers know that this great national concern is everybody's business and nobody's business. Too well do they know that, when the landholder is caught by the politician to be sheared, he displays not even the power to kick, or squeal, or bark, or bite! Not having studied the case, he knows not, or seems to know not, where to turn or what to do! Touch but a hair of any member of any other class, and the back of the whole sty is up in a moment. Equally among the press and among politicians, every other industry has its advocates. By whom are the leading papers of the country prompted to bear down, on occasions, with all their influence, on the judgments and the fears of Congress? Do not these papers, of widest circulation and most power, draw their life's blood from classes that subsist on the parings of Agriculture?—parings that are often cut into the very core of the fruit?—so much so, that after the produce of the farmer passes through the hands of the merchant, and the miller, and the tradesman, and those who live on the contentions and the maladies of the producer, there is scarcely enough left him for seed! What special organ stands ready to speak out for him, and to denounce the burdens which fall upon him in various forms that he does not see? Where, again we ask, where are these organs?—and Echo answers, "*Where?*" Even our own more able colleagues in the great cause deem it not pertinent to vindicate the political rights

of the plow, in apprehension of reproval and withdrawal of—whom? of whom does the reader suppose? Why, of the *agriculturists themselves!*—such agriculturists as may be likened, not to the fabled Centaur—half horse, half man—but to the tadpole in his transition state, with two frog's legs to his body, being one-third farmer and two-thirds partisan. Can any thing present a stronger proof of infatuation or blindness on the part of the agricultural community, than this very apprehension of their taking offence at the exposure of the impositions with which they are saddled? We, too, design to keep our skirts clear, perfectly clear, of the mud and the mire of *party strife*. Never shall the FARMERS' LIBRARY mingle in the fray for mere party ascendency, or scuffle for the picked bones dispensed to their followers by those who fatten on party spoils; but that resolution shall not blind us to the wrongs which parasitical classes are ever on the watch to inflict on the great, all-producing agricultural industry of the country; and in this we respectfully invoke the aid of our associates of the agricultural press; for with antagonistical, partial and vicious legislation, how can Agriculture ever prosper?

As is so forcibly set forth in the preceding letter, if it be pretended that all the appropriations for the "warlike machinery" of the Government be in truth so much dedicated indirectly to Agriculture, by protecting her hand-maid, Commerce—why not give some of it directly to Agriculture, that great producer for all? Why dress out and provide so much more sumptuously for the *maids* than the *mistress*? Does it not always and justly give rise to injurious suspicions? Some contend, and we do not say untruly, that the hands of Congress are tied—that Agriculture is the only concern of the people left unprovided for and unprotected by the Constitution. Well, if so, why pretend by an underhand, stealthy, and altogether unworthy and inadequate device, (and as a set-off against the $140,000 annually to the Military Academy,) to make provision for the diffusion of agricultural information by giving a pittance for the publication of the *Patent Office Annual!* Yes, this Annual is the great boon which Uncle Sam has the meanness to print and the impudence to offer as a set-off against the hundreds of thousands expended in the publication of military memoirs, and surveys, and maps, and books; and, after all, at whose expense are these government periodicals issued? Who is their Editor? Out of what fund are they printed? Where are the materials procured, and how and to whom at last distributed?

A short answer to these questions tells the whole story:

The materials have been heretofore cabbaged, in large proportion, and that, in many cases, without acknowledgement, from the works of individuals who give all their time to the collection of the knowledge and the facts, and look to their publication for support. Nay, more; in this contest of individuals against fearful odds, this great old Uncle Sam has the meanness not only to plunder without acknowledgment, but to pick the pockets of poor inventors to pay the expenses of printing! The least that he should be required to do, in common decency, when he comes forth with *his* annual, to rival and cut off subscription from the quarterlies and the monthlies and the weeklies of individual rivals, who publish on their own hook and pay their own expenses, would be to give to his periodical not only the Government imprint, but a fair and honest title-page, as thus:

UNCLE SAM'S ANNUAL
OF
STRANGE MECHANICAL AND AGRICULTURAL DISCOVERIES;

Interlarded and mixed up with all sorts of Agricultural Curiosities and Humbugs; compiled by Uncle Sam from the studies and labors of individuals, Editors and Publishers who follow the business for a livelihood, and printed and paid for out of a tax on poor Inventors—which is not generally understood—at an expense not exactly all told or easily ascertained, and distributed by Members of Congress, under their frank, nominally, but really by a tax for transportation to come out of the Treasury—and that not to curious agricultural inquirers, too poor to subscribe even for the cheap agricultural papers, but to penurious men of fortune who are too stingy to do so, or to politicians on whom the distributors can best reckon for that support which shall enable them to put it in the power of Uncle Sam to play off the same piece of injustice and humbuggery from year to year; printed at Uncle Sam's Press, but chiefly at the cost of the Planters and Farmers generally—though they do n't suspect it, nor is it intended that they should; yet the money for it is raised by impost duties on all the commodities *they* consume, making a very large proportion of all the income of the Government. All Editors are expected to puff this Annual, agricultural Editors especially.

Such is the title we propose for Uncle Sam's Annual. When Government or public institutions publish their own periodicals, or adopt others, and give them exclusively the benefit of their funds, countenance, or facilities, they ought at least to avow it honestly and aboveboard.

For ourselves, we here put on paper what we have elsewhere and otherwise offered:

☞ TO ALL INVENTORS OF USEFUL, NOT HUMBUG, AGRICULTURAL MACHINERY—Greet-

ing: *If you will yourself, or by your agent for Patents, send us a good drawing of your machine or implement, we will have it engraved in the best manner and published, without charge, and distributed through every State, among the most enlightened and respectable agriculturists in the Union—Provided you will accompany it with the explanations necessary to a comprehension of its principles and operation.*

Finally, if there be no difficulty of a constitutional character to forbid Uncle Sam from using his power and facilities for setting up as Editor and Publisher of agricultural periodicals, what is to hinder him from starting one on *Medicine and Surgery?*—to illustrate these subjects and the inventions connected with them, in rivalry with the Medical Repositories? Or, would it not be a more generous, manly and efficient mode of diffusing agricultural intelligence, if the old gentleman, instead of turning Editor and Publisher himself, would take the same amount to pay for distribution, free of postage, of the agricultural papers, which would gladly disseminate, without charge, all that his Annual contains, which is honestly come by, and that is *original and worthy of publication?* As for military pamphlets and books, and whatever smacks of brimstone, and blood, and all the "pomp and circumstance of glorious war," these he publishes already by the tens of thousands, because that is quite *constitutional!* Behold, farmers, a few items which you are to pay for—

"For three months' *extra pay* to non-commissioned officers, musicians and privates	$16,000
For transporting officers' baggage	50,000
For preparing drawings for a uniform system of artillery	7,000
For military and geographical survey of West Mississippi	30,000
Total	$103,000

True, for all these military memoirs, and maps, and diagrams, and drawings of the machinery and implements of human destruction, the farmer and the planter foot the bill, and cry huzza! huzza!—too well content that against the millions that go, for these purposes, out of the common Treasure, *he* should get, for *his* share, this *Patent Office Annual!* made up out of the brain-work of poor Editors, and printed out of the brain-work of Inventors poorer still, if possible. Truly, we are a wonderful people!—and this a "*model Republic!*"

Why not place the Normal School, the great feature in the plan, at Washington, and, for the farm, buy the 1500 acres at *Mount Vernon*, there to infuse the spirit of *patriotism* as well as to sow the seeds of knowledge? $25,000 a year for a Library for the use of J. Q. ADAMS, D. H. LEWIS, Mr. MARCH, Col. BENTON, and a few other ingenious and learned men of investigating habits, who lock up too much of what they already know—what, we repeat with Mr. Rees, will that do toward the *wide diffusion of useful practical knowledge among men?*

THE DROVER'S DOG.

WE have deemed it well to let the owner of *Boxer* and *Rose* tell his own story, seeing that he has accurately described, and in no measure exaggerated. the qualities, or overrated the value, of the subjects in hand.

The originals, which we have seen, and which are undoubtedly genuine of their breed, are truly represented in the Engraving. These are of the kind of dogs referred to by Mr. COLMAN, in one of his valuable Reports, in which we are favored with accounts, so graphic and interesting, of the *various markets* in England and Ireland. In one of these he says—"For a week or more before the tryst, the roads leading to Falkirk will be found crowded with successive droves of cattle and sheep, proceeding to this central point; and it is extremely curious on the field to see with what skill and care the different parties and herds are kept together by themselves. In this matter the shepherds are generally assisted *by their dogs*, which appear endowed with a sagacity almost human, and almost to know every individual belonging to their charge. They are sure, with an inflexible pertinacity, to bring back a deserter to the flock."

As to any law to restrain effectually the keeping of worthless, "sheep-killing dogs," that would be incompatible with universal suffrage and the largest liberty. How could one expect the demagogue, ever scheming with eye intent on the "spoils of office," to vote for a law essential to the success of a great branch of national industry, when by so doing he may jeopard his popularity and lose the votes of a score or two of loafers?

For the Large Gray Wolf, such as is yet common in the high lands of some even of the old, abused and plundered "Thirteen," and yet more so in Texas, there is no dog that can stand up against him, unless it be the breed of Mount St. Bernard, or of *Auvergne*, which our friend

G. W. LAFAYETTE says "are equal to those of the Alps."

It happened lately, near Tuskegee, Alabama, that a celebrated wolf, which had left one of his feet in a trap, and was yet the terror of the neighborhood, was by some means captured alive. The owner of two dogs of redoubtable strength and ferocity maintained that, for a wager, one of his dogs should master the wolf—and they were accordingly brought together; but he soon saw that his dog was overmatched, and, abusing his power and forgetting or trampling on the right, as man will ever do, he turned in the second dog, when the gallant wolf was dispatched with as little mercy as he had shown to his victims.

BOXER—THE ENGLISH CATTLE OR SHEEP DOG.
ROSE—A SCOTCH COLLEY SLUT.

The above were imported by B. GATES, of Gap Grove, Lee Co. Illinois; and were selected with great care in Europe. The Colley is much better known in this country than the English breed, which is a heavier dog, uniting strength with intelligence, and therefore better adapted to protect from wolves or sheep-killing dogs.—Yet he would not be able to conquer the Large Gray Wolf alone; but those are not often met with, unless in parts thinly populated. Our greatest enemy in Illinois is the Prairie Wolf, which is numerous.

Much has already been written on the intelligence of the Scotch Colley. My opinion is that the English "Butcher's Dog" is no way lacking on that point. Any reader who has visited Smithfield Market in London, on Monday or Friday, will, no doubt, have formed the same opinion. There you have an opportunity of seeing a number of these useful animals at their work. It would, in fact, be almost impossible to conduct this Market without their aid. There a vast number of different flocks are brought for sale from all parts of the country, to supply this great Metropolis, and are collected in the smallest possible space. The difficulty of keeping them from mingling with others falls principally on the dog. If one slips away, or a particular one wished to be caught, it is pointed out to him and is returned back, or held till the owner takes it—the dog always holding them by the side of the head, so as not to bruise the body.—By a word, or motion of the hand, they will run over the backs of the sheep, to stop them or turn them in a different direction. I have often admired with astonishment their quick and intelligent actions. They appear to read the thoughts of their master by his countenance, for their eye is continually on his, or the flock. Nothing else can attract his attention when he has work to perform, and at times I have thought he acted with more judgment than the owner.

Having had some experience in the unpleasant task of walking two or three miles for the cattle or sheep, after a fatiguing day's work in the harvest field, I was determined, if possible, to obtain one of these labor-saving animals, and let him take that part—as I have often known

them to go alone and bring up the stock every evening. Farmers generally, as well as others, are fond of getting labor-saving machines.—What is the difference whether it be a dog or machine?

The breed of *Boxer* is sometimes called the Drover's or Tailless breed.

In the N. Y. Farmer and Mechanic of April 30, 1846, the estimated loss of sheep annually destroyed by dogs in the State of Ohio is stated at $80,000. One farmer lost fifty in one night. If such loss takes place in one State, the amount must be enormous, including all—enough, I should judge, to awaken sheep-raisers to the importance of keeping a sheep-protecting dog, in preference to these murderous, sheep-killing curs. Kill them off and sell their hides, and the produce would soon be sufficient to stock the country with a different race.

In some parts of Europe they take the pups from the slut, and let them be suckled by a ewe and grow up with the flock—when, in case of danger or fright from strange dogs or enemies, they immediately run to their protector, knowing he will not suffer them to receive any harm.

Youatt says instinct and education combine to fit this dog for our service. The Pointer will act without any great degree of instruction, and the Setter will crouch; and most certainly the Sheep Dog, especially if he have the example of an older and expert one, will almost, without the teaching of the master, become everything that can be wished—obedient to every order, even to the slightest motion of the hand. There is a natural predisposition for the office he has to discharge, which it requires little trouble or skill to develop and perfect.

THE OLD GRAIN-GROWING AND PLANTATION STATES.

THEIR CAPACITY TO GROW THEIR OWN WOOL AND WEAR THEIR OWN CLOTH.—FACILITIES AND IMPEDIMENTS.

THE notes which follow this hasty introduction, and which are taken from the last Number of the "TRANSACTIONS OF THE HIGHLAND AGRICULTURAL SOCIETY" of Scotland, may prove both useful and interesting, as they are drawn from the experience of a district of hilly and high country—in some material respects resembling certain regions in our own—which appear to be in a fair way of being appropriated to the same branch of industry. They will serve, at least, to afford to a certain extent, a standard of comparison between the weight of fleeces and of wool, and the prices for the latter in America, and in that country where the whole business of sheep husbandry is probably pursued, with as much judgment and exactness in all its bearings, as in any part of the world.

One powerful consideration, which forbids with us the pursuit of certain Agricultural objects which are followed with profit in Europe, under circumstances of general similarity, is the great difference between the *cost of labor* there and here. But in the business of *raising Sheep*, and *growing Wool*, the labor employed bearing so small a proportion to the results, the crop being so large, compared with the culture and the harvesting, this consideration in the cost of production, loses its force in a great measure, and leaves it a matter of just wonder and reasonable inquiry, how it can be, that raising Wool at existing prices, should constitute still an attractive and profitable pursuit, in such countries as the stormy and snow-capped hills of Scotland and Vermont, and yet not be pushed to a much greater extent than it is, in the mountainous and cool regions of the southern and south-western States? We have a right to characterize the Sheep business as being attractive and profitable among the people to whom we have referred, for all who know anything of their character will admit that they are not the people to persevere in any path blindly, and without looking ahead to see where it leads. If the Scotchman says to himself, "Riches are got wi' pain, kipt wi' care and tint wi' grief," it is equally the good maxim of the Yankee to "look before he leaps."

We do not see, in fact, how it would be easy to designate any one source from which the aggregate income of Maryland, and Virginia, and Georgia, and the Carolinas could be so largely and easily augmented, and with so little outlay, as it might by the increase of their flocks of Sheep—improving them by a sufficient infusion of the blood of breeds that would ensure, according as circumstances may invite, either greater weight of meat or more or finer wool.

To this, however, there is one great difficulty: need we specify what that is, or is not every reader ready to answer—*popularity hunting!*

Yes, that is the festering sore that stands so much in the way of wise legislation, and mars so many measures that prudence and forecast would suggest for the great interests of the country—especially the Agricultural interest, on which so many others live and prey.

Virginia, for instance, instead of her 1,300,000 sheep, of "no particular breed," (as appears by the last Census), might easily, and without diverting any of her capital, support an additional number of sheep—say at least 700,000, making 2,000,000—at a cost to the flock-owners of not three cents a pound, and even then have not one-fifth as many per acre as New-York, which carried more than 5,000,000 by the last accounts.

We feel warranted in saying, at an expense of not more than three cents to the pound of wool, keep them, for Mr. COLES, a Member of Congress from that State, once assured us that he carried a flock of two hundred through the year, in good condition, at an expense of not ten dollars a year for all the salable product or staples they consumed. The first and chief step toward this extension of a plain, simple business, that any one may understand *if he will*, would be merely to retain for a year or two, the natural increase of existing flocks, crossing them where necessary, as before said, with rams of the most desirable blood.

True, says every landholder, I have much waste land well adapted to afford the requisite pasture for increased flocks, but the too probable result would be that scarcely could time enough elapse for the increase of the flock to the number proposed; and the requisite inquiries be made, and system adopted, for their sustenance and management, and the sale of my wool, when some gentleman's sporting-dog, or some loafer's cur, not more thievish than his owner, would break in and ruin what he did not kill—as a flock is sure to be ruined by the agitation and fright of having a portion of it thus destroyed—a fright which seems to leave on it a mortal blight from which it never recovers.

This increase of only 700,000 sheep in Virginia, (to which we refer in the way only of example), supposing the clip to average three pounds, which is less than even the small Sheep of the Cheviot breed mentioned in the following notes, and the price to be only fifteen cents per pound, and here would be to her landholders an augmented annual income of more than $300,000 from wool alone, allowing nothing for the Sheep—leaving them to pay expenses and keep up the flock to the standard number. And this sum is annually sacrificed to the State, owing in a great measure to a groveling fear of *losing votes!* To impose the fines and penalties, which ought to be five times the amount of the value of the Sheep killed, would be, forsooth, incompatible with "the largest liberty!"

The fine, we repeat, should not be limited to anything like so little as the actual value of the Sheep killed, because the damage to the owner consists in the disorder, which falls like a malediction of some evil spirit on all that survive the ravages of the dog; and to the State it consists in thousands being thus deterred from establishing new or extending old flocks, who might otherwise do it, with very little additional expense for labor or food, on their present landed possessions, and the immense tracts of unoccupied lands in the Carolinas and Georgia—lands now yielding absolutely nothing, not even the amount of the taxes paid on them.

Let it not be said that if flocks were thus extended wool and mutton would be of no value. Mutton, we doubt not, might be smoked and sent abroad, or made to constitute a part of the very liberal ration allowed to the negroes in these States (where the usual weekly allowance is now not under three pounds of good bacon, or full equivalents,) and the wool might be worked up on the premises of large planters, very economically, in every view, as we believe, by one of "Chase's Carding Machines," manufactured and sold on account of Mr. GEORGE LAW of Baltimore, as advertised on the cover of the April Number of the FARMERS' LIBRARY.

By using this machine, they can make of their refuse cotton the basis of a thread, which this machine covers with coarse wool: or otherwise, every farmer and planter may either exchange his own wool for cloth, or have it woven on his own account at small water power factories, such as it will elsewhere in this Number be seen are now in operation in Maryland, and such as, if sufficient wool were grown in the surrounding country, would spring up spontaneously, as it were, in every neighborhood, to consume the raw material and supply the cloth. In this way might every State, and every County in these old grain-growing and plantation States, revive and sing again, as in the early and virtuous days of American Independence, the good old song,

"I shear my own fleece and I wear it."

Thus could they clothe their household, great or small, from their present but unused resources, instead of being fleeced and taxed by those who have the sagacity to practice on the wise maxim of selling as much, and buying as little as you can, if you would enjoy the blessing—the *priceless blessing of real independence.*

The writer of these hasty observations remembers to have once asked the late NATHANIEL MACON of North Carolina, whether there was any law in his State restricting the number of dogs, or otherwise protecting the owners of sheep from their depredations? "No, Sir," said the venerable Senator, somewhat impatiently, "nor *would I live* in any State where there was *an anti-dog*

law! Every negro I have owns one, and I own thirteen, sir."

The choice throughout all these States seems as between sheep and dogs, to let the latter go and feed upon the former *ad libitum*.

The celebrated JOHN RANDOLPH inculcated special contempt for sheep, by stating on some occasion in his place in Congress that he would at any time "go out of his way to kick a sheep!" and that so much more truly great and useful benefactor of American husbandry, the late Col. John Taylor of Caroline, Virginia, whose portrait and memoir we yet hope to give to our readers, dedicated chapters of his *Arator* to the denunciation of this harmless, docile and useful animal—what wonder then that sheep should still be, as it were, under the ban of these States and their communities continue to send abroad immense sums of money for what all circumstances seem to invite them to supply for themselves? What wonder that it is deemed better policy to forego this source of easy income altogether, and to pay for transporting their wool to New-England and the cloth back again; in stead of selling the wool to the manufacturer with provisions also to feed him on the spot?

We could excuse this, as it seems to us, *dogged* obstinacy or infatuation, if it were founded on a genuine redeeming love for the pure-blooded of the canine race—from that love which prompted the last words of the son of Lord Ellenboro', when looking up to him for the last time he added: "*And father, you'll take care of poor Pincher, won't you?*"

But shame to say, the noblest is confounded with the basest of his race, nay the vilest cur without one drop of high or gentle blood is kept most especially in the eye of the time-serving legislator, who, for sake of his own popularity would allow to run at large every mongrel that comes into the world, to the disgrace and exclusion of the well-bred dog, and to the detriment of the States mentioned, to the amount of millions annually.

Are we not a glorious people? and are not *farmers* and *planters* of all others least apt to be *sheared* of their substance, by non-producing patriots! What is the *proportion* which is really paid by *them*, to make up the life-pay and the overgrown fortunes of men, in and out of the armies and navies of the world? Officers and contractors, who batten and fatten on the "pomp and circumstance of glorious war!" And this tax (of more than 300,000,000, since the last War) being levied indirectly, is paid willingly, for—good easy souls, they never suspect it—"They know not what they do!"

On the wool imported from the United States into England, the following remarks occur in a late report on the wool trade of that country:

UNITED STATES.—The import from this quarter affords a striking proof of the beneficial effect of the remission of the wool duty. It has excited great interest and surprise in the trade, and may be considered the greatest novelty of the year. The quantity received to this period, as an *experiment*, exceeds 3,800 bales, comprising a great variety of qualities. It is to be regretted that the unfavorable turn of trade has been against the operation. In washing and preparing the wools sufficient pains have not been taken; and there is want of discrimination in the selection of qualities. So far as used they have been highly approved: and we have full confidence that, if got up with care, they would be highly esteemed in this country. The American prairies afford peculiar advantages for the growth of wool; and we believe this branch of the trade will become one of great and increasing importance.

PERUVIAN AND ALPACCA.—Till within the last few months the supply of sheep's wool was limited. It is now increased, but the demand is restricted at rather declining prices of late. The imports of Alpacca have been rather large. There are no means of ascertaining the exact quantity, but a careful investigation leads us to estimate it at about 18,000 ballots of 80 lbs. each. It must be borne in mind that, during 1844, great difficulties attended the shipment, and the apparent excess of 1845 represents a portion of the previous year's clip. For the first six months there was great activity, and consumers bought freely for arrival. The demand has since been heavy, at almost nominal prices. The high rates abroad render it probable that considerable loss will attend the import.

THE EGG TRADE OF CINCINNATI.—We copy from the Cincinnati Gazette the following statistics of the Egg trade of that city, from which it appears that the business in that fragile commodity is quite an item in the sum of her productive industry.

Shipments from Cincinnati the past year,	963,000 doz.
Annual city consumption,	1,213,333 "
Total number of eggs brought to Cincinnati market	2,176,333 doz.

or *twenty-six million, one hundred and fifteen thousand, nine hundred and ninety-six* eggs.

This certainly shows a very commendable degree of industry on the part of the Buckeye and Hoosier hens, as well as praiseworthy care in their owners and others in gathering up the product and bringing it to market.

A farther recapitulation shows the following results as to value:

Value of 10,700 barrels of Eggs shipped from this port, at $8:44½ per bbl.	$90,361:50
Value of 1,213,333 dozen eggs consumed in this city, at 8 cents per dozen,	97,066:64
Total annual value of the Egg trade of Cincinnati,	$187,428:14

One hundred and eighty-seven thousand, four hundred and twenty-eight dollars, and fourteen cents!

The Cincinnati eggs principally go to New-Orleans.

APPLICATION OF STEAM TO AGRICULTURAL PURPOSES.

RECIPROCAL DEPENDENCE OF THE DIFFERENT ORDERS OF SOCIETY, &c.

Mr. BOLLING, of Virginia, as we believe we have before mentioned, has a steam-engine in operation on his large wheat-farm on the James River. We understand it works to admiration, and causes no fear of damage by fire. On the estates near Darien, Georgia, under the control of one of the most accomplished agriculturists in any country, Mr. J. H. COOPER, there is more than thirty thousand dollars' worth of machinery of different sorts, all made, except the "Bolton & Watt" Steam-Engine, by the negroes on these estates, and *all* managed by them. They are found, in fact, to make excellent engineers, so far as the management of steam-engines is involved.

In a communication to the Albany Cultivator, descriptive of the establishment of the "*Rochester City Milk Company*," for the accommodation of 100 cows, it is stated that the cellar is to be used for roots and milk-room, and also a part of it for a small *steam-engine*, employed to cut up and steam the food for the cattle, pump the water from the river to supply the reservoirs in the building, and to *heat the stable in the winter* by the steam.

The late NICHOLAS BIDDLE, among the most accomplished scholars and gentlemen that our country has ever produced, and a zealous and enlightened friend of its Agriculture, exemplified on the banks of the Delaware, the great thoroughfare of American travelers, the practicability of watering gardens, and irrigating surrounding and higher grounds, at pleasure, by means of a four-horse steam-engine, drawing from the river an ample supply of water for all purposes.

Thus it would appear that, changing but a single word of an article on this subject in the last Number of the FARMERS' LIBRARY, we may consider it as already demonstrated that the *American* farmer has it in his power, at a moderate expense, on almost every farm, to lessen the labor of the barn, to extend its (steam) application to various useful purposes, and to place farm economics in a position of advancement which they have not hitherto attained.

If this Milk Company can have a steam-engine at work in the *cellar* of a *stable*, containing all the food of the cows, much of it so combustible, what is to hinder any farmer and planter from having one where his operations are on a scale to justify and call for it? The Sugar-Planters have them *in* their sugar-houses. There is one at work night and day in this building where we are writing, corner of Nassau and Spruce streets, New-York—a very large building of five stories, in which a great variety of business is carried on. Why should not *tobacco be pressed* as well as cotton is pressed, by steam? We do not mean that a steam-engine should be erected on purpose, but that besides threshing grain, cutting up corn-stalks and straw and vegetables, cooking them, where that may be deemed expedient, grinding all substances, and for all purposes—sawing plank, posts, rails, &c., the same engine might drive the tobacco-press, and prize, probably, 100 hogsheads in a day. It should pump, too, from a well or neighboring spring, all the water for the domestic animals, so that they need never have to go abroad, exposed to bad weather and wasting their manure.

The patrons of the FARMERS' LIBRARY have read it to little purpose if they have not learned not only the fact, but (what makes the fact so much more useful) the *reason* of the fact why a *certain degree of warmth* is equal to, and a substitute for, a *certain quantity of food*. The Milk Company at Rochester seem to be fully aware of this; hence, they say that the steam-engine to be employed in the cellar of their establishment is intended, among other things, to *warm the stable!*

This immense building, in a corner of which is the office of the FARMERS' LIBRARY, where we are writing, is heated through the winter entirely and throughout with *hot air*, created and diffused by means of the steam-engine in the cellar. Not a spark of fire is used anywhere in the whole edifice, except the coal fire in the furnace below; and thus, the chances for conflagration are, as the insurance probably is, (and certainly ought to be,) greatly diminished below what they would be if each room were heated by a wood or coal fire.

It would be well if farmers and planters, who dwell quietly in the country, too rarely excited to mental action, except at the instigation of selfish partisans and demagogues, would *habituate themselves to reflection* on all the wrongs they

suffer from partial government, and on all the means of economizing food and labor.

If they will only read the pages of this Journal, as it appears monthly, for a few months, we will "try," according to our poor abilities, to *amuse them into a habit of thinking* on their condition, and on the means of meliorating it; and if, with this habit of reading and inquiry, they could once in every few years mount the *back of a good honest horse*, (two friends traveling together with one pair of saddle-bags between them,) and take a ride leisurely of some hundreds of miles over the country, keeping their eyes and ears open—he must be of the *Rip Van Winkle* family indeed, who would not find his account in it.

Reader! these hasty thoughts are strung together and put on paper for what they are worth, before sunrise, in the midst of a population of near 400,000 people—all of whom, judging from the quietness of the streets, are yet under the influence of the "leaden sceptre," but, in two hours, what a change will have come over their dreams! These 400,000 consumers will have risen and *broken their fast on your products*, and will *swarm* every street, so that you can scarcely elbow your way along, like so many bees winging their way, each to gather what he can! Is it not, then, agriculturists, your clear and obvious interest that these town-consumers of your products should be as numerous and as prosperous as possible?—that they should have good health, good appetites, and pockets full of money?—*but not at your cost!* Nor will it happen at your cost, but by a partial and vicious course of legislation; and that will not occur, if you will take care that a system of education be established *throughout the country* that shall qualify your sons to prosecute Agriculture with a knowledge of the principles that properly belong to it as an intellectual pursuit, and that shall, at the same time, endow them with capacity to perform that most important of all duties—*the duty of making their own laws!* No, farmers! with these precautions for your own protection, it is to your interest that these consuming communities should become in your vicinity as numerous as the sands on the sea-shore, and as prosperous as industry and fair legislation can make them.

"To fix the happiness and virtue of a nation on a solid foundation," says a celebrated philosopher, "they must rest on a reciprocal dependence between all the orders of citizens."—But we had like to have forgotten the Rochester Milk Company.

Farmers may see and profit by this case, how readily men in towns lay their heads together to achieve, by concert and a combination of intelligence and capital, what cannot be effected when intelligence and capital act and operate as they do among farmers, who so rarely, and with so little perseverance, confederate for the protection of their own interests—the elevation and advancement of their own pursuits. The profits of this Milk Company will consist in the interest yielded on a money capital employed between the *hay and corn and milk producing* farmer, in the country, and the milk *consumers in town*—and, at first view, might seem to be injurious to the farming interest, by the amount of the saving of the cost of milk to the towns'-people; but does not that very saving enable them to consume an increased quantity of milk, or to lay out the amount saved for a freer indulgence in the use and enjoyment of other things produced in the country by Agriculture and Horticulture? If the mechanic or the artisan can get two quarts of milk for what he had to give for one, he can supply his young children with a diet almost indispensable to their existence in hot weather; or if saving in the cost does not lead, invariably, to increased consumption of that particular commodity, does it not leave the amount of the saving to be laid out in other commodities—necessaries or luxuries—products of the dairy, the field, or the garden?—in butter, in melons, in ripe fruit, in green corn, strawberries, or other things? This reciprocal dependence of the different orders of Society is, in fact, one of the most admirable orders of Divine Providence—inviting us to be grateful for and to emulate the benevolence it evinces.

But we must stop now to break our own fast, promising, some of these days, a chapter on the tendency and value of labor-saving machinery and capital to create demand for manual labor and agricultural products.

P. S. The Rochester City Milk Company furnishes the citizens of Rochester with pure and wholesome milk, at the following low tariff of prices:

Daily Average in One Month.				*From 1st June to 1st October.*	*From 1st October to 1st June.*
36 qts.	and	over,		2 cents per quart.	2½ cts. per quart.
12 "	under	36,		2½ " "	3 " "
2 "	"	12,		2½ " "	3½ " "
1 "	"	2,		3 " "	4 " "

To find the *average*, add the quantity taken in *one* month, and divide by the days in the month. [Albany Cultivator.

CEMENT.—In the New-England Farmer, vol. xii. No. 3, page 21, we find the following statement:

"The late conquest of Algiers by the French has made known a new cement, used in the public works of that city. It is composed of two parts of ashes, three of clay, and one of sand. This composition—called, by the Moors, *fabbi*—being mixed with oil, resists the inclemencies of the weather effectually."

No. II.....NOTES, AGRICULTURAL AND MISCELLANEOUS.

RAMBLES IN THE SOUTH.

THE CATTLE TRADE BETWEEN THE WEST AND THE ATLANTIC MARKETS.

[The first branch of industry in the order of observation was that of the *Tar and Turpentine* business of of North Carolina, (to which brief reference was made at page 544 of the last Number.) On that we were favored with a very full and satisfactory sketch by Colonel McCLOUD, of Smithfield, N. C. which we loaned to a friend, who unfortunately, and much to our disappointment, has not (this 20th of May) returned it. If recovered, it shall have in the next Number the precedence which it had in local order on our tour of observation. The author will, in any event, accept our hearty thanks for his kindness in preparing it, at our express and earnest instance.]

ONE of the most interesting and substantial branches of American Industry is that of *Grazing Cattle* in the West, to be sent in "droves" and sold in the Eastern markets. Some of its details may prove entertaining to the curious reader, however alien it may be to his own pursuits.

The business of the grazier and drover is, perhaps, nowhere better understood, or carried on with more spirit, than *in Kentucky!* and what better basis for it could any people have than such magnificent fields of *blue-grass* as are to be found nowhere else, perhaps, in the world —fields which afford a good bite even under the winter's snow, and in earliest spring look more like luxuriant grain, than grass pastures.

Nothing can be more charming to the eye of the traveler than her extensive forests, so clear and open that a huntsman may pursue the deer at the top of his speed, with the grass growing matted up so closely to every tree that it seems to have bursted up through a rich *blue-green* carpet.

This Kentucky blue-grass possesses that quality for thriving in the shade which recommends the orchard grass *(dactylis glomeratis)*, with this advantage over it, that it grows thicker and more evenly—not so much in tufts; while it equals it in the quality of early and late pasturage.

Many attempts have been made to propagate this noble grass in other, especially in more Southern States, but without any or with very limited success. We saw some at Mr. DANIEL TURNBULL'S superb residence, near *St. Francisville*, Mississippi; but, with all the benefit that care and skill could offer, its growth was sickly and unpromising. These rich fields of Kentucky blue-grass serve, however, only to prepare her stock to be finished for market from her fields of redundant Indian corn. The one prepares the frame-work, while the other puts on the covering and fills the inside with fat.

Kentucky raises within her own borders all the beef with which she supplies herself, and, in part, the demand of the country. The whole number of fat cattle *driven* from the State annually is about ten thousand. They commence starting about the 20th of February, and continue to leave home until about the 1st of May. Of these droves, the last put in motion arrive in New-York about the 1st of August. By that time the grass-fed cattle from States nearer the market begin to re-supply the vacuum which had been filled throughout the winter and spring by the corn-fed beef from more distant regions.

As has been already stated, the beef fatted in Kentucky is the unbought produce of her own mountain ranges and blue-grass pastures.—About a third in number is supposed to come down from the highland Eastern Counties of the State—as White, Harlan, Letcher, Clay, Perry, Breathitt, Hite, Floyd, Morgan, Lawrence, Carter, Fleming, Bath, and Montgomery. These are of a smaller and more thrifty race of cattle—better adapted than would be a heavier breed to the rugged, woody country in which they are reared—without any special feeding, winter or summer, until about four years old, when they are sold in early spring, as lean stock cattle, for about 2½ or 3 cents a pound (that is according to what it is estimated they would make, net weight) to the grazier in the blue-grass Counties. He grazes them on his rich pastures through the summer, and with his corn, fed abundantly through the winter, they are prepared to move on by the first of February, to be sacrificed in the Eastern market—weighing there from 650 to 700 pounds, On this Kentucky corn-fed beef, the Irishman just escaped from famishing in his own country, for want of

anything—even potatoes, to eat, fills his belly every day with the eighth part of his day's earnings, paid him in hand and in hard money.*—These neatly made, small boned, native born cattle from the hill country are said to make sweeter and more palatable beef than the larger Durham, or other artificial breeds of imported origin.

A curious feature in this branch of industry is its natural and economical alliance with the *Pork business*. The herd of bullocks goes before, with one of swine—unclean beasts as they are—to follow after and clean up what has not been all eaten or thoroughly digested by their illustrious predecessors. No wonder the Hebrews detested them so heartily that they could not be brought to pronounce their name—so that the word *hog* is nowhere to be found, even in ALEXANDER CRUDEN'S Complete Concordance to the Old and New Testaments. No wonder that the resolute old Eleazar—when seized by the slaves of Antiochus Epiphanes, and his mouth wrenched open to force him to taste, or pretend to taste, swine's flesh—should have kicked and squalled, and chosen rather to suffer death than break the law of his God, as he understood it, and so "give offence to the weaker people of his nations." Such manly fortitude in resisting temptation to break the Law and the Constitution is admirable in all rulers—and the more exalted the more so, seeing how true it is that, the higher the post of the functionary, the more catching and pernicious is any bad example he may set, either in morals or politics; and yet a right hungry horseback-and-saddle-bags wayfarer, who should chance to come athwart a group of drovers, reclining near a cool spring, under the shade of a magnificent sugar-maple, on the great thoroughfare between Kentucky and New-York, with their ash-cake and pan of fried bacon, might not carry his antipathy to swine's flesh quite so far as did old Father Eleazar.—But *chacun a son gout*—in Gastronomy, at least. Let us return to the practical connection between *feeding bullocks* and *fattening hogs*.

In November, when the supply of grass begins to decline, the grazier begins to feed his corn to his cattle—stalk, blade, grain and all together. The corn which he gives them is never husked, or shucked, as it is sometimes called.—We should have elsewhere stated that the grazier often sends his agent up into those Eastern Counties to buy his stock cattle.

When the cattle have eaten what they will of the corn, thus thrown to them in its natural, rough state, the hogs are let into the field, through a "slip gap," to glean the remainder. This is found sufficient to sustain hogs—giving from 1½ to 2 hogs, weighing (gross weight) from 150 to 200 pounds each, at twelve months old, for each bullock. So that the grass and corn that graze and fatten 30 bullocks, will do the same for from 45 to 60 hogs, averaging 175 pounds each.

From the 20th of February to the 1st of March, when both are fat, they begin, as before stated, to move on their way, to supply the great hives of non-agricultural producers, that swarm in the Atlantic Cities—swarms that could not subsist without the produce of the land, to work up, and transport, and live upon; but without whom the agriculturist *could live*, but could not accumulate or prosper. Thus has Providence ordained that society should flourish by a reciprocal dependence of its different classes. Yet it always happens that the congregated and parasitical classes contrive to draw their life's blood from those who are spread over and doing the work of the country—producing its bread and its meat—all the while making them believe that they are feeding them. Variety of classes and division of labor tend to mutual benefit and the highest improvement in all the arts; but, in the action of the laws and the burdens of the Government, favor should be shown in proportion to the number and the utility of each. "*Render unto Cæsar the things which are Cæsar's.*"

It behooves the landholder to entertain a becoming jealousy of the non-producing classes—for it is in the nature of things that power should steal from the many to the few. See already how it has been contrived to have the Military elevated in the public sentiment, and favored by the legislation of the country, above the Civil, or the producing and the tax-paying portion of the community! and see, too, how besides, no inconsiderable portion of those who are educated out of the common treasure of the Nation, in the Military Schools, are selected expressly as being the descendants of men who have seen some service in *fields of battle*; but who ever heard of the appointment, to either of these Military Schools, of the son of a *farmer*, on the ground that the father had set to the whole country a salutary example of extraordinary industry and intelligence in the confessedly most useful of all human employments? Well, back to our cattle.

On their way to be slaughtered, the hogs travel at the rate of a mile a day slower than the herd of bullocks; so that, by the time they arrive at their common halting place for the night, the cattle have eaten their corn and hay. Of the first, they will eat what is equal to from a peck to a half bushel per day—taking one-third of their allowance in the morning, and the residue at night. The cattle, having thus satis-

* Those who dig up the old pavements in New-York now get $1 per day. The *pavers* get $1 37½; and the work is so done as to require to be re-done not less than once a year.

fied their hunger, all lie down immediately for the night, and by that time up comes the drove of hogs to sup on their leavings. Thus they travel on, day by day, making from 10 to 11 miles a day, and so reaching New-York from Kentucky in about 73 days. A drove of the smaller and more active native breed of cattle will perform the trip in about 65 days.

The curious fact in *Swineology* is affirmed by a Kentucky drover, that his hogs which weighed 150 at starting reached an average of 180 on arrival at New-York—being nearly half a pound a day while on the journey. On the other hand, the loss of weight—or "drift," as it is called—of cattle, is equal to 150 pounds, which a bullock of 1,000 pounds' weight at leaving home lessens on his way to the Atlantic butcher. This drift, or loss, it is observed, is chiefly first in the kidney-fat and fat of the entrails. It has been ascertained that a hog will set out on his journey to that bourne whence no *such* traveler returns, so fat as to have no cavity or vacuum in his corporation. If, as he journeys on, you do n't feed him, he lives first upon and consumes his gut-fat; then his kidney-fat; and, lastly, his carcass wastes away.

The cross of the Berkshire has much improved the old Kentucky country breed of hogs, especially in their traveling quality—making a stock superior to the full-blood for the purposes for which they are designed.

In driving cattle, the practice is to stop (but not to feed), for an hour at mid-day, when the cattle in less than five minutes all lie down to rest.

A drove of 120 cattle, as easily driven as a smaller number, is usually attended by a "manager" on horseback and two footmen. One footman goes ahead leading an ox the whole way, say 800 miles. The manager on horseback takes his station behind the first forty head, and the third man on foot brings up the rear. There are stations along the whole route—country taverns, often kept by the owner of the adjoining farm, who thus finds a market for his own produce, and keeps at any rate, a constant supply of what is needed for the drover. Wending their way through Ohio, the farmer supplies them with that glorious plant, the pride of our country, Indian Corn, as they have feasted on it at home, stalk, blade, and grain altogether; but, when on their melancholy journey they touch the line of Pennsylvania, Mynheer brings forth his fragrant hay and corn already shucked, and finally, when they come late enough to market, they are turned at night into grass lots, prepared and kept for the purpose.

The cattle reared in the Corn regions of the West, especially in Ohio and Kentucky, have been heavily dashed with the Short-Horn blood, by which their average weight has been increased, it is said, about 200 pounds, with great improvement in their fattening properties and the quality of the meat.

A Kentucky farmer would now be very loth to let a Bull of the much vaunted old Bakewell breed, with his straight back and long horns and fat all to itself *overlaying* the carcass, come within a ten-foot pole of his herd of cows. Cattle with a strong infusion of the improved Short-Horn blood, as by the late celebrated Grazier Steenbergen, are still esteemed to be preferable to the full-blood, as being more thrifty and active. This improved breed has so increased, and high grades of the blood so widely diffused, that instead of the fancy prices from $300 to $500 for a yearling bull or heifer, such an one of good make will now fetch about as much as a four year old bullock well fatted—say from $40 to $50.

For obvious reasons, cattle are not so much transported on railroads in this country as in England, where the distances from the feeding place to the market are so much shorter. Cattle will go very well on a railroad for 12 hours together, but then they must lie down, which they cannot do in the cars like a hog, that lets himself down and sleeps on the space upon which he stands. The charge too, on the railroad in our country is too high. For lame bullocks that are sometimes sent from Harrisburg to the Philadelphia market, they charge half as much as it costs to drive them all the way—750 or 800 miles from Kentucky to New-York—the one being $8, the other estimated at about $16.

If cars could be, as in process of time they will be, so constituted for this purpose as that cattle could lie down, they might be so transported from distant points to great advantage, as this mode of transportation would save most of the "*drift*," or loss of weight which they undergo on the way, to say nothing of the deterioration which must ensue along with this wastage, in the *quality* of the meat.

But here again the farmer and the grazier, and individuals and States, may cry again on Hercules to help them in making roads to open up and transport their agricultural resources. As if, because it would incidentally aid Agriculture, Hercules won't help him even though it would so much contribute to strengthen his own favorite *military plans, power, and machinery!* Indicate to Uncle Sam a spot on the earth, a pocosin or a wilderness to be surveyed, and cut through purely and exclusively for the Army, and straightway he unlocks the Treasury of the People, and takes out millions to do the work; but only tell him, or let him suspect, that it is needed for the development of agricultural resources, to multiply the means of subsistence and the wealth and the population and improve-

ment of the country, and the promotion of industry and the arts of peace, and like a terrapin he says, I have no power, and draws himself into his shell; or if he speak, it is only to denounce all such useful and peaceful enterprises as odious monopolies and contrivances of the Devil, and the enemies of the individual right of every man to do just what he pleases. *But*, when they *are done*, if you ask him to pay what an individual would have to pay for the same service, he abuses the directors as extortioners, Jews them down to the last cent, instead of being glad in this way, indirectly at least, to give them a helping hand; and after all, when his warlike machinery is to be put in operation, if you did not give him the use of these very works (which he denounced and refused to assist in constructing), to give ten-fold efficiency to his man-killing operations, he would press, seize upon *vi et armis*, and use your road and your canal, just as the commander of an army, with his long-sword and life commission, would press any farmer's horse or wagon into the public service. Truly, farmers are a wonderful vigilant and self-redressing class of people, and Uncle Sam the meekest and most self-denying hater of monopolies under the canopy of a righteous heaven!

The system of selling their cattle is the last act in the drama. For this purpose the grazier calls in the assistance of his "*agent*" in the large towns. Here, too, is another of the branches of business or divisions of labor, cut out for mutual convenience, but, *as usual*, at the farmers' or graziers' or countrymen's expense! His agent is kept constantly advised by his manager of the approach of his cattle, as they come "marching on their winding way," so that, were these agents to meet together daily, and compare notes, they could tell almost to an hour how many cattle would arrive on any given day. Having arrived in the out-skirts of the town with his cattle, the grazier or the manager puts them under the control of the agent, giving the necessary attendance until they are sold. The agent is henceforward, and from the beginning, the only man known to the butcher or the grazier. The recognized go-between-both. He gets from the grazier one dollar a head for selling, but the *countryman*, in this protracted business, is not yet done paying—another paring is to be taken off of his apple—another class of employées is to be supported. The collector of the agent's bills against the butchers, is to be paid a commission of *one per cent.* by the grazier, when he comes to settle with his agent.—This is a business which could not so well be done by either grazier or agent, because these bills must be collected at the butchers' stalls, and it makes a separate business of itself. When collected, the proceeds are paid over, not to the grazier, who knows nothing of the butcher or collector, but to his only trustee, the selling agent. He deposits the amount in Bank—probably the "Butchers' and Drovers' Bank," and checks for the amount, or if, as is natural, the grazier, as soon as his cattle are sold, wishes to depart, the collector throws his note to the amount of his bills against the butchers into the bank, where it is discounted, another thin slice being taken from the countryman's apple in the shape of bank discount. These bank officers make another class of goers between the producer and the consumer, their pay being taken finally out of the former, in about the same enormous proportion that the landed interest pays over every other interest of society, because it either does not know it or knows not how, to redress itself.

The last of the Western cattle arrive in New-York about the 1st of August, when they are driven out of the market by the grass-fed herds of more neighboring regions. The cost of road-expenses of a drove of 100 head from Kentucky, is about $1500. Some of the latter droves come in on grass at a less expense, but, as before intimated, the decline or "drift" is greater than when fed on hay and corn, and the beef not so good.

Such is an outline of the cattle trade from the West to the East, varying of course, in its results, according to distance, state of the market, &c.

On this, the 20th May, the beef market of New-York is considered to be uncommonly lively—the best bullocks bringing an average of $58 a head, or a little above 7—about 7¼ a pound.—The supply has been for some weeks past, almost wholly from the West. The demand of this market is about 1300 head a week, or 70,000 a year.

We conclude this hasty sketch with the following quotation from a late Report on the American Provision Trade with England, supposing that the whole subject may possess some interest for our readers in both countries: and will only add that the common price of corn in Kentucky, is 75 cents a barrel of five bushels. It is not easy to discern all the effects of this noblest production of the earth, on questions of agricultural economy:

"It is natural that our Provision trade with America, after three years' working, should be fully developed. It is not quite so with regard to swine products. It was at first expected that bacon and hams would be sent forward freely. Such has not been the case, and the expectation of a trade cultivation in these articles is much abridged. A greater business was looked for in barreled pork, but the value of this article in America being nearly equivalent to that of Irish or Hambro', importations have been in a great measure precluded thereby; saying nothing about the disparity in quality, the American proving much inferior to the other two. However, there have been some good lots of Amer-

ican imported, and we must not take it as a security that, because little has been done in this article this year, an extensive business is not yet to be cultivated in it. Lard has become a staple article of commerce, both for culinary purposes and pressers' and soapers' uses. With respect to beef, there can be no mistaking American superiority. The imports this year have been of uniform good quality, and nothing is now inquired for, for ship stores, but American beef. It has been steady in price all the year, scarcely differing 5 per cent. in value. It is considered to be remunerative to the packer and exporter, as well as importer here; and the manufacture of it is now so well understood there, and has so gained confidence here, that there is no doubt of this article (equally with lard) becoming a staple article of commerce. Under a 21s. duty a trade in butter will not be cultivated; the fluctuations in this market, and the risk of it becoming grease, operate against it, but we are likely to have some extent in butter shipped as grease from the States, and an effort may be made to cultivate a butter trade from Canada. But there is a prejudice against it, and it is not likely either to be extensive or profitable. There is very little doubt about the trade in cheese becoming extensive and permanent. Some of the imports have been equal in quality to any made in England, and the ready sale this article has met with nearly all through the year, with the good prices lately obtained for it, say as high as 60s. per cwt., will tend to encourage the trade in it. A better knowledge of packing the cheese for the English market, so as to prevent loss in cutting out, is the principal thing wanted, and that will no doubt be gained in time. The imports of these articles this year have been, 14,831 tierces, 3,437 barrels, of beef; 7,713 barrels of pork; 10,471 barrels, 49,452 kegs, of lard; 5,322 casks, 43,702 boxes, of cheese. And the stocks now on hand are light of beef, pork, and cheese, but heavy of lard."

VIATOR.

DRILL HUSBANDRY IN DELAWARE:

ITS ECONOMY AND SUCCESS—THE AMERICAN AND ENGLISH DRILL—HUSSEY'S AND HUMPHREY'S REAPING-MACHINES.

WILMINGTON, May 16, 1846.

JOHN S. SKINNER, Esq.: After the very flattering opinion expressed by you to me the other day in New-York, of the improving state of Agriculture, and the general intelligence and success among the farmers of Newcastle County, compared with other sections of the Union you have so recently visited, I take great pleasure in forwarding to you for the FARMERS' LIBRARY some interesting facts which should be extensively known to the whole farming community, in relation to "*Drill Husbandry*" as practiced by several of our largest and most successful agriculturists in Delaware—members of our Society and Farmers' Club. The long use of the Drill in English and European Husbandry, you are aware, has been tardily adopted in the United States, where there is still greater need of *economizing time and money*, and (except for root-crops) we have but few and imperfect reports in our journals, of American success and practice in drilling crops of any kind.

In answer to a number of letters received by me, as late President of our Agricultural Society, and Messrs. Sawdon, Jones & Co. who have for years been in the full tide of successful experiment with the Drill, I proceed to inform you that two kinds of the Drill are known and used by these gentlemen—the first brought out from England by Mr. Francis Sawdon some ten or twelve years ago—is now manufactured by Mr. Groundsell of Chester, Pa. and cost from $90 to $100. The other, the American Drill, invented and patented by Mr. Moses Pennock, of Kennet Square, Chester Co. Pa. the inventor of the revolving rake, which costs about the same, and although varying somewhat in detail from the other, the principle is the same; each is driven by two horses, the carriage resting on an axle with two wheels; above is the reception box for the seed and concentrated manures or ashes, guano, poudrette, &c. which communicates with from 7 to 8 tubes or funnels through a hollow coulter through which the seed is regularly and evenly deposited and covered in the earth. The enclosed letter addressed to me from Mr. John Jones, of Greenbush, is fully confirmed in its statements by Messrs. Sawdon & Co. all eminent practical farmers of this County, and the inferences from their experience are—1st. That by the use of the Drill there is a great saving of seed per acre, from at least two to three pecks of wheat, five pecks with the Drill being considered ample; 2d. A greater amount of acres can be sown per day, more evenly covered, and thus materially lessening the cost of agricultural labor; 3d. That when the wheat *is gathered* the *product* is at least *one-fourth greater* than when *hand-sown*, after the old method; that it withstands the winter frosts better, is less liable to be spread or thrown out, and stands stronger and firmer—

thereby resisting the inroads upon it of the "Hessian fly," the great pest and destroyer of this valuable grain—all which facts are respectfully submitted on behalf of the Delaware friends of "*Drill Husbandry*;" and permit me to say and prophesy that upon fair trial they *will be corroborated* by our brother American farmers after having fully tested the Drill.

The attention of our farmers has been also directed to the utility and importance of the "*Reaping-Machine.*" I can only say here, that both those of Hussey and McCormick are duly appreciated by our Newcastle County Farmers, and that the seed which Sawdon & Pennock's Drills *sow are, or will be, generally reaped* by Humphrey's and McCormick's Reaping Machines.

I will only add, in conclusion, that these Drilling-Machines will plant wheat, corn, rye, oats, barley and grass-seeds, with all the pulverized and concentrated manures at one and the same time.* Lime is best and most equally spread by the lime-cart invented and patented for the purpose, and familiar to your readers. The subjoined letter of Maj. Jones goes more into detail, and is valuable for the facts it contains.

Very truly and sincerely your friend,
JAS. W. THOMSON.

WHEATLAND, 12th May, 1846.

DEAR SIR: I frequently receive letters of inquiry from agriculturists residing in different sections of the Union, on the subject of the Drill, or Seed and Grain Planter. These inquiries generally are as to its utility, economy and mode of operation, and whether they could be so constructed that the concentrated manures, guano, poudrette, ashes or plaster, may be sowed with them at the same time of sowing the various kinds of grain, and also grass-seeds.

Presuming that you have received letters on the same subject, I take pleasure in giving you my opinion of its worth, so far as my experience goes; and you have within your reach much better authority—that of Francis Sawdon, who is justly regarded as the founder of the Drill Husbandry in this State, having imported a Drill from England some two years ago, and used it with great success ever since.

My own experience has been with the *American Drill*, or Seed and Grain Planter, (which is an improvement upon the Jethro Tull Drill,) made and patented by Moses Pennock in 1841. I have used it for sowing five crops of wheat, three of oats, and three of corn. As it is now made, it is not adapted to sowing grass-seeds, or plaster, or any of the manures. The rollers are pierced for sowing turnip-seed, but I have not used them for that purpose. As the Drills are now fixed, they may be easily regulated so as to sow from one bushel of wheat or oats to two bushels to the acre. Ten acres' sowing may be regarded as a good average day's work. I have on one occasion sown eighteen acres, but the rows were long and land well prepared, and men and horses active. I generally drive two horses—some drive three—when sowing either wheat or oats. Pennock's machine sows 7 rows, each 9 inches apart. The outside drills, being 4 feet 6 inches asunder, are used for planting corn. To prepare for corn, after we have flushed and *harrowed the ground well*,* we run a furrow or horse-path every 9 feet, in which the horse (one is enough for planting corn) walks, drawing the Drill after him, and planting two rows at a trip, dropping about a quarter of a bushel per acre. I try to thin this out, so that it stands at about one foot apart, one stalk in the hill, giving at that rate about 4½ superficial feet to each stalk in the field, and each stalk separate and not choked up by another of its kind. The oats and corn pass through the same holes in the roller. The wheat roller or holes would do for rye also. I plow, harrow, and sow, always lengthwise of the land.

I believe the wheat crop has been increased at least twenty-five per cent. where the Drill has been used. The measurement of the lots of Doctor C. Noble shows a greater result. I assisted in the measurement of those lots, and I think the account may be regarded as an average result, as given in the wheat crop. For particulars see the letter of Dr. C. Noble, as published in Mr. Ellsworth's Report, which in part is as follows: One acre sown broadcast, 2 bushels to the acre, yield 27½ bushels; one acre drilled, 1½ bushel seed per acre, yielded 35 bushels per acre—difference in favor of the Drill. 8 bushels. Add a quarter of a bushel saved by drilling or in seed, and we have eight bushels and one peck per acre in favor of the Drill.

It is true, both of those lots of land were good, the land well prepared, and the seed well put in [as every good farmer's will be]. *I believe that thin lands put in with the Drill* will produce corresponding results in favor of the Drill. I have not proved those results by measurement on my own land; the reason why, is because it was *poor*, and I did not wish to show the poverty of my poor old, worn-out farm.

As the best evidence I can offer of the utility of the Drill, our keen, cautious farmers have watched the wheat as it grew, after the two first Drills used by Mr. Sawdon and myself, and have so far become satisfied with the results that Drills have been purchased in St. George's

---

* Not "as now made." See next letter.

* Here is one evidence of the thorough manner in which these Delawarians do their work: "*After we have flushed and harrowed the ground well*"—young farmers, *do hear that!* [*Ed. Farm. Lib.*

Hundred alone within the last ten months, some of which put in over 300 acres last fall, and several others are now engaged to be ready for August next.

Some of the other Hundreds of Newcastle County are preparing to use them in a corresponding ratio.

I will close this and leave Mr. Groundsell, Mr. Pennock, and Mr. Carr (who I understand has sent to England for the best improved Drill—*success to his enterprise!*)—and also Mr. Sawdon, to give their views.

Very respectfully your friend,
J. JONES.

Dr. J. W. THOMPSON, Wilmington, Del.

I am not certain if one bushel of seed wheat or oats is not thick enough. Last year I sowed nine gallons of wheat and less of oats per acre.
J. JONES.

THE FARMERS' LIBRARY AND MONTHLY JOURNAL OF AGRICULTURE.

CLOSE OF THE FIRST VOLUME—COMMENCEMENT OF THE SECOND.

IF Editor and Publishers have had the good fortune to redeem their promises, and meet the expectation of their patrons so far, they venture to hope that the Second Volume will give yet more satisfaction.

Every farmer can understand that no one can manage an estate the first year he comes into possession with so much efficiency as he can afterward. It requires a year at least to get acquainted with the nature of the soil, and the resources and wants of the farm: how much stock he can venture to keep—what implements are needed, and how he shall adapt his force to his work; for the work to be undertaken will depend on the capital at his command, and the crops to be grown; and these again will be regulated by the nature of the markets, which, to be remunerating or otherwise, will depend on distance, modes of conveyance, and other considerations.

So has it been with us. True. the Editor had no little experience in the conduct of agricultural journals, for, to think and to write about what might best elevate and promote American Husbandry, may be said to have been the passion and the habit of his life; but heretofore his labors and illustrations had been connected rather with the practice than the philosophy—with the A, B, C, than with the grammar of the art. When we undertook to edit and publish an agricultural periodical, devoted to "AGRICULTURE, INTERNAL IMPROVEMENTS, AND RURAL AND DOMESTIC ECONOMY," no such thing had ever before been attempted in the United States.—Then it was most important, as it is still important, to make known generally, and as soon as possible, all existing practical improvements in the art, and the machinery and processes employed in it; and to shadow forth such as might yet be accomplished for its benefit.

The first object was to infuse an *esprit du corps* into the agricultural community, to get them to *think* and to feel that they too had a great business peculiarly and exclusively their own; one as susceptible, at least, as any other, of *melioration and progress!*—that they, too, needed a medium through which they could hold communion with each other, and promote their common interests by a free and reciprocal communication of thought and experience.

In the heartfelt conviction that such a great public convenience and instrument of public usefulness ought to be provided for and encouraged, the old "American Farmer" was established, without concert or promise of anybody's countenance. The issue proved that the founder was not mistaken—that the fruit was indeed ripe, and waiting to be plucked. The work was welcomed and supported by the *elite* of the *country* in every State. Then soon followed the "PLOW-BOY," at Albany; then the "NEW-ENGLAND FARMER," by the talented FESSENDEN; and the "CULTIVATOR," established by the New-York Agricultural Society, and on its account at first, and soon and long after for his own, edited by the able and lamented BUEL.—"Even in their ashes live their wonted fires!"

Now there are very many agricultural journals, conducted with eminent diligence and ability, which have served to spread abroad, through the agricultural community, a spirit of inquiry and a habit of reading, on the greatest, and, in its kindred sciences and literature, the most various and entertaining field of study that ever has been spread out before the mind of man. Thus it is, pioneer publications have cleared the way and opened the forest, until, in the present condition and wants of Agriculture, a new epoch has arisen; one which seems to create or rather to constitute the same demand now, for a journal more voluminous and elaborate, as twenty-six years ago seemed, in like manner, to call for a register of agricultural experiments, and advertisement of improvements

then actually achieved: and hence, now the establishment in this great emporium of enterprise, of the FARMERS' LIBRARY AND MONTHLY JOURNAL OF AGRICULTURE; which, though it contains more than five times the quantity of matter that the old American Farmer did, and is published in a style incomparably superior, is nevertheless, in keeping with other things, published at the same price; to wit, $5 a year, or 5 copies for $20.

This is a work intended to explain the philosophy and the rights of Agriculture, as well as to illustrate all improvements in its practice and its machinery—a work which, we make bold to say, shall *deserve* to be supported by *every friend of the agricultural interest in the Union.* Very far from detracting from, or grudging success to, cheaper journals, dedicated to the same interest, unbounded success is heartily wished to them all. In fact, they but create a laudable desire for more and more of the knowledge they impart, and prepare the public taste for works more elaborate and expensive, just as common schools are the indispensable nurseries of a university. They but create and aggravate the thirst which this work, with its hundred pages monthly, is intended to slake.

To all our cotemporaries and allies we cordially extend the hand and the heart of fellowship and good will, except one—yes, there is one rival, whose meanness we detest, though we dare not despise his power. Powerful as the eagle—fit emblem of his own laziness and rapacity—he has lain in wait, while we poor individual Editors and Proprietors have opened the ground and overcome all difficulties; and now that we have made a despised cause popular, and provided food for the hungry and the destitute, he, in a spirit of envy and against every principle of common justice and honesty, filches us of our hard earnings, and, without stint or scruple, appropriates our labors to himself. Yes, reader—tell it not in Gath! publish it not in the streets of Askelon!—but that rival agricultural Editor is no other than "UNCLE SAM" himself! There he sits picking himself like a lazy bird in his eyry—as Dr. Franklin said of the eagle—while we poor Editors, on our own hook, catch the fish; when he darts upon us in the ruthless exercise of his power, and snatches them—to be distributed, not in equal portions, share and share alike, to the whole family of birds, but exclusively to *his own pets.* Beginning with a legitimate and unpretending *List of Patents* granted through the year, he now comes out with a great *Agricultural Annual,* under the title of "THE PATENT-OFFICE REPORT"! and even that not fairly made up of original matter and new discoveries, with engravings for the benefit of inventors and the public, but a compilation, tame and unscrupulous, from the agricultural periodicals of the day. Seizing, in the plenitude of his power—since he cannot be sued—on our materials, he prints them on Government paper, at the Government press, and at the expense, not of those to whom he gives them, but of ingenious and, for the most part, poor and useful inventors—and sends them free by the Government mail. It must, therefore, be admitted that this all-powerful rival has great advantages over all other Editors, whose materials he thus appropriates to himself; but, then, it is not to be doubted that, if he possess a particle of common honesty, he, like any respectable builder, will make an equitable appropriation for each of the individuals from whom he gets his materials.

Even in war, though the officer, dressed out in his life authority, may *press* the farmer's, wagon and team, the public would cry, Shame! if he had not the decency to offer pay for them! Nor is it to be expected that Congress will fail at least to put other agricultural periodicals on something like a fair footing, by at least sending *them, too, in the public mail, free of postage.*

Why should Uncle Sam direct this flagrant and unconstitutional abuse of his power against the proprietors of *agricultural papers* exclusively? Why does he not set up his newspaper, his religious paper, his medical repository, and his law reporters? Why not set up the business of type-founding, engraving, paper-making, and all other arts, trades and manufactures?—Why, in a word, should not the subscribers to the *American Farmer, Southern Planter, Southern Cultivator, Albany Cultivator, American Agriculturist, Ohio Cultivator, New-England Farmer, Maine Farmer, Farmers' Monthly Visiter, Boston Cultivator, Massachusetts Plowman, American Quarterly Review, New Genesee Farmer, Farmers' Cabinet, Lancaster County Farmer, North Carolina Farmer, Southern Agriculturist, Alabama Planter, Planters' Banner, Nashville Agriculturist, Dollar Farmer, Indiana Farmer, Prairie Farmer,* and the *Michigan Farmer*—why have they not as much right to have their papers sent to them free of postage, at least, if not subscription, as the chosen favorites (mostly rich men or politicians of *both* parties), to whom this Government Annual is sent, thus entirely free of cost?—as much as to say to the community, Don't give a *sous* to these fellows; let them work for nothing and find themselves, and UNCLE SAM, in the fullness of his power, and his own latitude of construction, will lay by and seize upon the fruits of their labor when they are gathered in, all ripe, and, culling the choicest from their baskets for you, will leave the refuse for those who *are fools enough to pay for it!*

After all, it may be demanded, whence is derived the power to build up this new branch of

the Government? and who shall guaranty to what purpose it may not be abused? When did men ever possess the chance to exercise power for selfish ends, with impunity, that they failed to do it? Are they less prone to do so when banded into *parties?*—we care not what party—political or religious? Who will guaranty how long it will be before this new function—this Editorial office—will begin to insinuate party doctrines, and favoritism or hostility to particular institutions and branches of industry, *under the guise of benefiting Agriculture?*—And is this the only boon to be offered to the landed interest, like a tub to the whale, to divert it from the recollection of the *millions it* has paid and the millions *it* is yet to pay for the military machinery of the Government?—for the hundreds of thousands paid annually for military schools—for the more than $100,000 to be paid this year for military surveys and maps? If Uncle Sam can set up his periodical for the benefit of Agriculture, why not construct free roads, and build free bridges, and manufacture poudrette, for its benefit? and illustrate its philosophy by chemical experiments? Would not all these things, too, benefit and enlighten Agriculture? Truly, he would make a formidable rival in any branch of business; but in this of publishing a periodical, with materials taken annually from individual proprietors, let him beware that, in experimenting to see on how little they can live and yet work, he does not serve them as the Frenchman did his horse. And how, then, will he get along with *his* great free agricultural periodical—free *at the cost of poor inventors!*

EDITOR FARMERS' LIBRARY.

May 22, 1846.

—

Since writing the above, we have been favored with the loan, only for a few minutes, of the last "Annual Report of the Commissioner of Patents," and *Inspector General of Agriculture.* The Commissioner's part of it, it is clear enough, from the little we have seen, is written with a clearness and force, and a high appreciation of the importance of Agriculture which does him much credit. We complain not of him, nor of any of his accomplished and diligent associates, some of whom, it is earnestly and honorably urged by the Commissioner, are so meanly compensated as to show that at Washington salaries are too often graduated with utter disregard of the talents required for a proper discharge of the office. This report of the *Patent* Office consists of 1184 pages, of which *nearly eleven hundred are composed of agricultural items!* collected and made up chiefly of the cream of agricultural papers.

The Commissioner says, "The sum now annually appropriated for agricultural purposes is taken from the Patent Fund, *all of which has been paid* into the Treasury *by inventors*, and which has been set apart by law for the promotion of the useful arts and for the benefit of that class of citizens *from whom it has been collected.* They *justly* complain (says the Commissioner) of this *mis*application of the Patent Fund, and demand that it shall be appropriated to the increase of the efficiency of the *Patent-Office*"—and, we add, or else the expense of obtaining patents should be abated to that amount, and the inventive genius of the country be unfettered and brought into yet fuller and freer play.

For what has been done in the way of applications for *agricultural* inventions we have turned, as we always do, with interest to the Report of the accomplished examiner, Doctor PAGE, who says briefly, not multiplying words where there is no need of it:

"Number of applications 133—number of patents granted 48.

"But little novelty has been presented to the office in the way of agricultural implements; and although the subject is one of fast growing interest and value, and has received some rich contributions from chemists and philosophers, yet those branches usually coming before the office have not received as many accessions as in former years. Some improvements have been made in plows, particularly wheel-plows; several new devices have been patented, and one new and apparently valuable invention for adapting the set and draught of the plow in a ready manner, so as to take more or less land, at pleasure.

"The *bee-hive* has been the subject of much attention—many of the hives presented, exhibiting only changes of form, without the attainment of any new principle in bee management. It is believed that no effectual means have yet been discovered of preventing the ravages of the bee moth, independent of constant personal attention; although several of the inventions patented for this purpose will doubtless, to a considerable extent, diminish the evil. In spite of all the artifices to decoy the moth into traps and to deposit its eggs where the grub will be so remote from the entrance to the hive as to perish in the attempt to reach the comb, this insect retains enough of his instinct to enter as it is wont, with the bee, and deposit its eggs directly in the comb, even in the uppermost part of the hive. As the moth exists only at certain seasons, and does its work only at night, it follows that the entire enclosure of the hive at night will exclude the enemy with certainty. For this purpose the hives are sometimes arranged under a tightly jointed house, provided with ventilated doors of wire gauze, which are shut regularly at night and opened early in the morning. The objections to this plan are, the expense of the fixture and the unfailing attention required to open and close the doors; for a single act of neglect in this duty might result in the destruction of the hives. A curious invention has been patented, worthy of mention in this connection. The patent was granted for combining a hen-roost in such manner with the door of the hive that the weight of the fowls going to roost would operate, through the medium of levers and pulley, to close the door of the hive, and the door opened by reverse action in the morning when the fowls leave the roost. If, as the inventor

asserts, he can depend upon a certain number of his fowls retiring and rising with the bees, it will prove a valuable labor-saving invention."

We shall, when we can procure a copy of this Patent Office Agricultural Report, use such matter as we can find—which has not been transferred from our associates—when it may seem to be of importance to the great interest to which they and we are giving all our time and attention, with so much labor and *at so much expense*.

MAIZE, OR INDIAN CORN.

THIS important and valuable plant is of the genus *Zea Mays*, from *Zao*, to live, in reference to the nutritive properties of the plants belonging to the genus. The French name, *Blé de Turkie*; the Spanish, *Trigo de Indias*; the Italian, *Grano Turco a Siciliano*; the German, *Turkische korn Mays*.

America is doubtless the native country of a plant so important to her interests; and it is supposed to be indigenous to South America, being the only species of grain cultivated in the New World previous to its discovery by Europeans. It was found in use by the natives of the West Indies, when they were first visited by Columbus. Notwithstanding this well-established fact, the origin of maize has been a disputed point; and several early European writers maintained that it came from the East. Varieties of the plant, it is said, have been brought from the Isle of France or from China. In favor of its American origin, however, is the fact that it was found in a state of cultivation in every place where the first navigators landed. In Mexico, according to Hernandez, and in Brazil, according to Zeri, and that in the various countries it had proper names, such as *Maize, Flaveli*, &c., while in the Old World, its names were either all of American origin, whence it was derived. Immediately after the discovery of America, it was spread rapidly in the Old World, and soon became common—a fact not reconcilable with its former existence there.

To these proofs, Aug. de Saint Hiliare has added another. He has received from M. de Larranghu, of Montevideo, a new variety of maize, distinguished by the name of *Tunicata*; because, instead of having the grains naked, they are entirely covered by the glumes. This variety is from Paraguay, where it is cultivated by the Guaycurus Indians, a people in the lowest scale of civilization; and where, according to the direct testimony of one of them, it grows in the humid forests, as a native production.*

The early authors who have written about America, with few if any exceptions, mention maize as an indigenous grain. Thus Acoste, who died in his 60th year, in 1600, at Salamanca, in Spain, calls it "Indian wheat to make bread of," and says "that it was the only grain found in the West Indies by the Europeans—that it grows upon a long reed with large grains, and sometimes two ears on a reed, on one of which 700 grains have been told—that they sow it grain by grain and not scattering, as is done with wheat; and it requires a hot and moist soil. There are two sorts of it, (says this author), one large and substantial, the other small and dry, which they call "*moroche*." The leaves of it, and also the reed are very good for cattle, green, and dry, it serves as well as straw. The grain is better for beasts than barley. The Indians eat it hot, boiled, and call it "*moté*." There is a sort of it large and round, which the Spaniards eat toasted; they also grind it and make cakes, which they eat hot, and these, in some places, they call '*arepas*.' They also make bread, to keep, and sweet-cakes of it."

Maize is now extensively cultivated in Asia, Africa, and the South of Europe. On all the shores of the Mediterranean—Spain, Italy, and the countries of the Levant—it supplies a considerable portion of the food in most common use. Large quantities are raised in the valley of the Danube and other rivers which flow into the Black Sea, and exported thence to various parts of Europe. The region of the maize in Europe seems to have been extending northward. It is grown in France, Germany, and even in the Netherlands. The last, however, is somewhat beyond the true region of the maize, which requires the warmer summer of the South of Europe to bring it to its full perfection. The best kinds suited to the colder climates are the Dwarf, some of which, even in the latitude of Paris, complete the circle of their vegetation in a period comparatively short.

In America, maize flourishes from 40° of south latitude to about 45° north latitude. Of the cultivated *zea mais*, naturalists hold that there is but one species. The varieties of the species cultivated in the United States are very numerous. A list embracing many of these has

* Johnston's Farmers' Encyclopedia.

been furnished by P. A. Brown, Esq. in an interesting essay on Indian corn. (See *Farmer's Cabinet*, vol. 2.) It is an interesting fact that the rows of grain on a cob, however numerous or limited, always present even numbers.

CROP OF INDIAN CORN IN THE U. STATES.

We now present the following Table of the quantity of Maize or Indian Corn raised in each of the United States and Territories in the year 1839, according to the Census of 1840; to which we add the value of the same in each section, as estimated by Professor Tucker:

States.	*Bushels.*	*Value.*
NEW-ENGLAND STATES.		
Maine	950,528	$712,896
New-Hampshire	1,162,572	796,626
Vermont	1,119,678	746,652
Massachusetts	1,809,192	1,356,894
Rhode Island	450,498	281,561
Connecticut	1,500,441	900,264
Total New-England	6,992,909	$4,794,893
MIDDLE STATES.		
New-York	10,972,286	$6,857,699
New-Jersey	4,361,975	2,617,175
Pennsylvania	14,240,022	8,544,013
Delaware	2,099,359	1,259,615
Maryland	8,233,086	4,058,271
Dist. of Columbia	39,485	19,742
Total Middle States	39,946,213	$23,356,515
SOUTHERN STATES.		
Virginia	34,577,591	$17,288 795
North Carolina	23,893,763	9,477,505
South Carolina	14,722,805	7,361,402
Georgia	20,905,122	10,462,561
Florida	898,974	404,243
Total Southern States	94,998,255	$44,994,506
SOUTH-WESTERN STATES.		
Alabama	20,947,004	$8,378,801
Mississippi	13,161,237	5,264,494
Louisiana	5,952,912	2,976,451
Arkansas	4,846,632	2,423,316
Tennessee	44,986,188	11,246,547
Kentucky	39,847,120	7,969,424
Total S. West. States	129,741,093	$38,259,033
NORTH-WESTERN STATES.		
Ohio	33,668,144	$6,733,629
Indiana	28,155,887	5,631,177
Illinois	22,634,211	4,526,842
Missouri	17,332,524	3,482,505
Michigan	2,277,039	455,408
Wisconsin Ter.	379,359	75,872
Iowa Ter.	1,406,241	281,248
Total N. West. States	105,853,405	$21,186,681
RECAPITULATION.		
New-England States	6,992,909	$4,794,893
Middle States	39,946,213	23,356,515
Southern States	94,998,255	44,994,506
South-Western States	129,741,093	38,259,033
North-Western States	105,853,405	21,186,681
Total United States	377,531,875	$132,591,628

The average value per bushel for the United States is about 35 cents.

The blades or stalks of Indian corn, as is well known, form an excellent fodder for horses and cattle; and which, estimating twenty pounds for every bushel of grain, amounts to 3,775,000 tons—worth, by Professor Tucker's estimate, $37,750,000.

Thus, the value of the crop of Indian corn in the United States may be stated to exceed *one hundred and seventy millions* of dollars, and greatly exceeding the value of any other crop raised in the country.

THE HARROW.

NEXT in antiquity and usefulness to the plow, in the implements of Agriculture, is the harrow. This instrument, in some rude form or other, must have existed from a very early period. For, as the preparation of the ground for the reception of the seed required one kind of implement, so the covering of the seed with the loosened soil, required another of a different form. The first and most readily found harrow was, probably, merely the branch of a tree; even so late as 1668, Gervas Markham, in his "Farewell to Husbandry," p. 61, gives a wood engraving of a harrow, the directions for the manufacture of which he thus states: "Get a pretty big white-thorn tree, which we call the hawthorn tree, and make sure that it be wonderful thick, bushy, and rough grown." The natives of some parts of India, in fact, still use no other instrument. It was a farther improvement to construct a wooden harrow by fastening together the branches of the fir-tree, leaving their partially removed spurs to serve as teeth. The peasants of some portions of Russia still employ such a harrow. The joining together of wooden frames without teeth, as in the *Haken* of the Belgian farmers, was a later improvement—then came the addition of wooden teeth, next the use of iron teeth with wooden frames, and, lastly, the construction of most descriptions of harrows entirely of iron.

This instrument, indeed, succeeds to the plow in the natural order of description, and in the uses to which it is applicable. Its purposes are to pulverize the ground which has been moved by the plow, to disengage from it the weeds and roots which it may contain, or to cover the seeds of the cultivated plants, when sown. The form of the plow, as before shown, has been very different in different ages and countries, and there is little resemblance between the rude machines of the ancients and some of those which are now employed; but the harrow seems to have been nearly of the same form from the earliest times to which we are able to trace it on sculptures, medals, and other remains of antiquity. It is, in fact, a much more simple machine than the plow; yet it is an instrument of great utility in tillage, and, with one exception

hereafter noticed, no other has yet been devised to supersede its use, or to equal it, for many of the purposes to which it is applicable. (*Quart. Jour. of Agr.* vol. i. p. 503.)

Important as is the operation of harrowing, and second only to that of plowing, it has often appeared to me that these implements have scarcely obtained the attention which is their due. I here speak less with reference to the improvements which have been carried into effect, than to the selection which appears generally to have been made. The operation is in many neighborhoods so performed as to exhibit a prominent defect, either in the management of the farm, or in the construction of the implement.

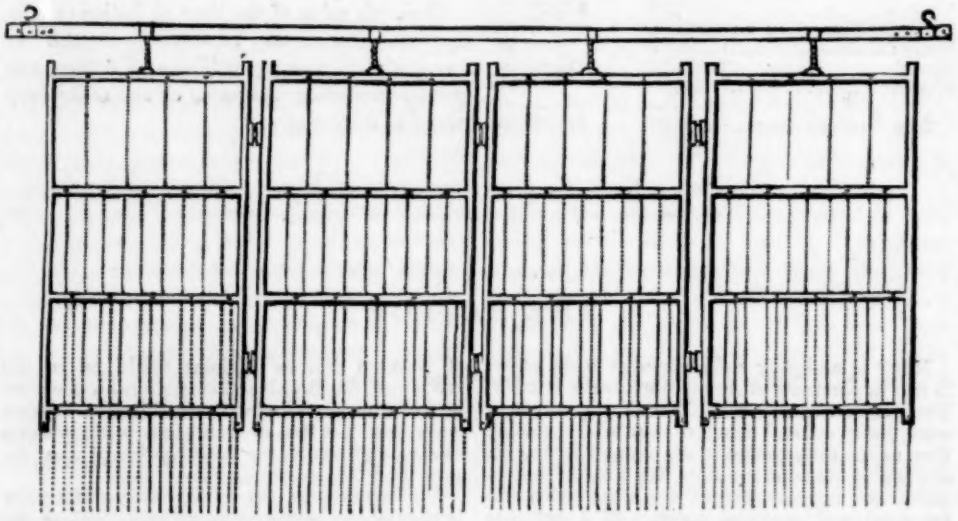
Perhaps the blame may here be fairly shared. It is admitted by all acquainted with the subject, that harrowing, especially on heavy soils, is the most laborious operation on the farm; not so much, perhaps, on account of the quantum of power requisite for the draught (though this is sometimes considerable), as for the speed with which the operation is, or ought to be, accompanied; and yet it is frequently left to the charge of mere boys, and sometimes performed by the worst horses on the farm.

If we examine a field, one-half of which has been harrowed with weak, inefficient horses, and whose pace was consequently sluggish—the other half with an adequate strength and swiftness of animal power—we shall find the former will be rough and unfinished; the latter comparatively firm and level, and completed in what would be called a husbandry-like manner.—Scarcely anything in farming is more unsightly than the wavy, serpentine traces of inefficient harrowing. The generality of harrows appear too heavy and clumsy to admit of that dispatch without which the work cannot be well done; and, though it is evident that different soils demand implements of proportionate weight and power, yet, for the most part, harrows have been rather over than under weighted, particularly when employed after a drill, or to bury seeds of any kind.

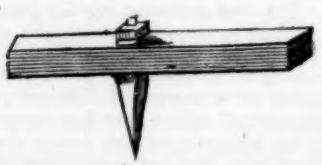
Harrowing has been so long regarded as an operation which must be attended with considerable horse-labor, that attention does not appear to have been sufficiently turned to the inquiry whether this labor might not be greatly reduced by lightening the instruments with which it is performed. Many would be surprised at the amount of reduction of which seed harrows, at least, are capable; and, where land is clean, to see how effectively a gang of very light, small-toothed harrows may be used.

Having noticed, in some parts of Norfolk, the perfect manner in which seed-corn is covered by a common rake with wooden teeth, a friend of mine constructed a gang of harrows on the following plan, and he states that it proved the most popular and useful implement of the kind to the farm.

GANG OF LIGHT SEED HARROWS.



The frames are of ash, and as light as possible, with iron teeth being but three inches long, exclusive of the part which enters the woodwork. They screw into the balks in the manner shown in the annexed figure.

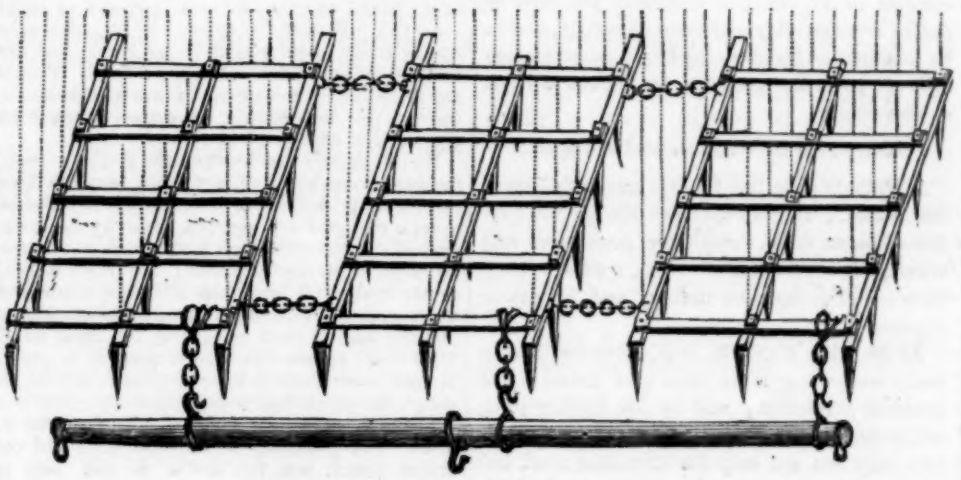


It should be observed that the above four harrows are amply sufficient to cover a twelve-furrow stetch or ridge of 108 inches, but three will be wide enough for a three-furrow stetch of 90 inches, exclusive of a small portion of the furrows. If for some purposes the teeth be found too thick, every alternate tooth may be taken out; but for general purposes this will hardly be necessary. The two horses require, on this plan, to be kept quite level; for, if one be suffered to go in advance of the other, a diagonal line is produced, by which the teeth will be made to follow each other, instead of cutting fresh ground. I am aware that, by the usual construction of harrows, a diagonal line of draught is required, in order to throw the teeth into a proper working position; but I am strongly inclined to the opinion that the correct working of the implement ought to depend on its construction, and not on any particular mode of working it. Besides, the system of keeping one

horse in advance of his partner is bad in principle; it is an unequal division of labor, the fore-horse being compelled to do more than his share of the work, which, under any circumstances, is always heavy enough. The balks of the above set of harrows were made of wood in order to ensure extraordinary lightness; but, for general purposes, I prefer those made of iron, the weight of which can be increased to any reasonable degree without adding much to their substance. This is important in working tenacious clays, which, by adhering to the common clumsy wooden balks, considerably increase the labor, and at the same time impede the proper execution.

In an experiment made between a pair of wooden harrows and a pair of iron ones, constructed on the same plan, having the same number, and precisely the same disposition of the teeth and frames, although those of iron were found to be 20 lbs. lighter than those of wood, yet the former worked decidedly better and steadier than the latter; in fact, the iron harrows cut into the land, while those made of wood rode, or rather danced, on the surface.—Next, as to the length and position of harrow-teeth. The common plan is to set them springing a little forward, and gradually increasing in length from the fore to the hind row. There is no advantage in this, but the contrary; for, if the action of harrows so constructed be carefully examined, it will be found the reverse of what it ought to be—the hind part will be thrown up, and the fore teeth, short as they are, will have to do all the work. In some experiments made with harrows, the fallacy of the idea, that an inequality in the length of the teeth was essential to the proper working of harrows, was made evident. For this purpose, a harrow constructed on the old-fashioned plan of unequal and springing teeth, was reversed, putting the longest teeth in front; the whole of the teeth then pointing *backward* instead of *forward*. Nothing could work better; there were no chucks and snatches, but all went on smoothly and steadily. I do not, from this circumstance, recommend harrows to be so constructed, but have no doubt that each harrow should have all its teeth of equal length, and they should stand perpendicularly from the frames.

GANG OF HEAVY IRON HARROWS.



The above engraving of iron harrows is introduced to show the form in which they are usually made; they are used in gangs of three, four, or five, as may be required to suit the lands on which they are used, and may be made to any weight required.

[Ransome's "Implements of Agriculture."

THE MAKING AND USE OF CAPONS.

FRENCH METHOD OF FATTENING FOWLS.

Is it not unaccountable, Mr. Editor, that in this age, which has acquired the name of *utilitarian*, such slow progress should be made in the practice and economy of *making, using and eating Capons?* In a certain County in Maryland, where the writer first "saw the light," one faithful old woman slave of his grandmother possessed the art of caponizing fowls; but with her, alas! the secret expired. Even with her, it was only put in use so far as to provide a parent who could carry about and protect from the weather a double brood of young ones, leaving the natural mothers to return to the work of procreation, after having been shut up a few days, just long enough to dry up their tears and forget that they had been robbed of their progeny—the process of oblivion being as short-lived with some two-legged mothers, as with "other some."

This reference, by-the-by, Mr. Editor, to my old grandmother's negro capon-maker is one of the writer's most youthful reminiscences of dear old *Calvert County* in Maryland.

Ah, happy hills! ah, pleasing shade!
Ah, fields beloved in vain!
Where once my careless childhood strayed,
A stranger yet to pain!

We can just remember when her party feuds, beginning on account of devotion to certain distinctive principles of government, but, alas. too soon degenerating into devotion to—other things; when her Kents and her Taneys, her Fitzjameses, and her Roderick Dhus, headed each his clan, and fought as for life or death; but, in the hottest of their contests for principle, both would have united, by a sort of moral crystalization, to heap infamy on any one who should have dared to advocate repud—no! sir; no! I will not write the shameful word as connected with old Calvert County, where once lived a race of gentlemen of as good manners and high honor as any that ever "trod shoe-leather!" but *revenons a nos Capons!*

The great value of the art, as it is exercised in Paris, and in a *few* places in the United States, consists in its effect in disposing the fowl to *fatten* more quickly and more perfectly, and in its tendency to improve the flavor, as every one will tell you who has eaten fat Capons in Paris or elsewhere.

"He hath bid me to a calf's-head and *capon*."

In Philadelphia, too, Capons are getting more into vogue. In New-Orleans, among the Creoles—honest, quiet, hospitable good-livers and brave people, who know "what 's what"—they have a genius both for making and for eating Capons.

At the table of Col. H. near Columbia, I have lately something more than *seen* them, in the greatest perfection; and in his poultry-yard, which includes acres, and is "a sight to see," you may see not only the barn-door fowl, but *turkeys* also, that have been caponized. His gardener performs the operation with infallible success, going about it in the simplest manner, and putting aside as useless the instruments we have seen figured in agricultural papers, as complicated and polished as if they were intended for the most critical and delicate of all surgical performances. His poultry-yard sometimes contains more than 500 chickens, purchased by him from his own slaves, at a fair market price, after being fed and fattened on his own corn, of which last year he made *only* 25,000 bushels!

As, according to all accounts, the table of the Parisian epicure is for nothing more distinguished than for the excellent *quality* of the poultry, and the art with which it is cooked, (roasted with cresses, not a bad way,) I have supposed that you might be inclined to give place to the following description of the FRENCH METHOD OF FATTENING POULTRY, as laid down in a late number of the "*Journal d'Agriculture Pratique et de Jardinage.*" Will the reader who may amuse himself by making the experiment, substituting Indian corn for barley meal, be good enough to communicate the result to the FARMERS' LIBRARY? Small things are not to be despised, for it is of such things, in a great measure, that the world is made up. Besides, we have good authority for asserting the meliorating influence of emasculation on the flavor of meat; for you recollect the great inspired Psalmist says it is only "*If* I were *hungry* I will eat the flesh of *bulls*, and drink the blood of *goats*;" and why not apply the same condition to poultry?

FRENCH METHOD OF FATTENING POULTRY.

The fowls to be fatted are placed in boxes 1½ foot square or more, frequently in second-hand barrels provided with rude wicker-work tops, which are kept covered with mats to exclude the light. The barrels are half filled with clean straw, and will each accommodate four fowls; the straw to be removed from time to time, as cleanliness may require.

The chickens are to be fed three times a day—at six in the morning, at noon, and at 8 at night—on the following mixture: 5¼ oz. of barley meal (Indian meal might be as good), and the third of a pint of sweet milk, *warmed*. This is the allowance for each fowl; but as it is essential that the food should be warm, it must be prepared at each feeding.

To administer this broth to the fowls, a small funnel is requisite. The chicken is taken from the barrel with the left hand, its feet are placed upon a mat and are secured there by the pressure of the operator's left foot, which had better be unshod for the purpose; the head is held firmly in the left hand, the bill held open with the thumb and fore finger, the funnel introduced and the food poured in it with the right hand. This done, return the fowl to another barrel (it is most convenient to have duplicate barrels), in which the straw has been renewed. One person, accustomed to it, can *feed fifty fowls in an hour*. The milk may be substituted by lard and warm water, but the fowls do not look so white.

It is better the first day not to give more than a third of a full allowance, the next day half, and the third day a full ration. Some of the larger fowls may require more, but this may readily be ascertained by the crop.

The time required to fatten a pullet is from 18 to 20 days—average 18. In this time she will gain in weight, if well fatted, 27 oz. having consumed in barley flour or meal 5 lbs. 10 oz., in milk 13 lbs. 6 oz.—in all, 19 lbs. of food.

The best age at which to fatten pullets is between ten weeks and three months. At six months they are tough. For a capon the best age is six months. A young hen lays the first year about 150 eggs, the second 120, the third 100—diminishing every year as she grows older and should "go to pot" after the fourth.

BALLS FOR REMOVING GREASE AND PAINT SPOTS FROM CLOTH, &c.—Fuller's earth, 30 parts; French chalk, 1 part; yellow soap, 20 parts; pearl-ash, 15 parts. Make into a paste with spirit of turpentine, and give it a slight color with a little yellow ochre, then cut it into cakes.

PREPARATION AND APPLICATION OF COMPOST.

OATLAND COTTAGE,
HEMPSTEAD, L. I. February 28, 1846.

DEAR SIR: I have received several communications by post, soliciting information respecting Farm Journals, and Decomposing Vegetable Substances in twelve or eighteen days, as referred to in your November Number, page 247.

In the first place, my working journal is too large to forward, and too long to transcribe, and your extract is a fair specimen of one page.

The method I have pursued for about seven years in decomposing trash of any sort for manures, is as follows: A layer of any rough stuff I can collect, one foot thick, on which I spread lime (purchased in New-York at 5 cents per bushel,*) about a quarter of an inch thick; then another layer of the first, then bone-dust about half as thick, and so on, alternately, till I make my heap as large as I want it, covering the heap with a mixture of fine charcoal and plaster about two inches thick. The charcoal costs me 4 cents a bushel, the plaster $1 12½ per barrel. The fine bone-dust can be procured of Mr. HORNBY, N.Y. and the charcoal of James Barling, Chemical Works, James-st. N. Y.—the whole covered over with 6 inches of soil. In about 3 days fermentation takes place, and goes on rapidly, and will require wetting. Sticks forced in the heap for about 3 feet act as indexes. If getting very hot and dry I add as follows: For potatoes, a solution of potash, about 5 lbs. to a barrel of water; or, what is better, house slops, *all of which I save*, such as soap-suds, chamber-lye, &c. This I apply by making holes about a foot apart in the heap, with a strong pointed stick, covering the holes up when applied. For usual garden purposes, 2 lbs. sulphate of ammonia to a barrel of same stuff. If for wheat, potash and sulphate of ammonia, half the quantity. Sometimes it requires melting twice. About the ninth or tenth day I break it up, and in a few days it is fit for use, and I have never failed in having it sufficiently fine to plow or spade in.

For many years it has been a common practice on Long Island, and perhaps elsewhere, to give land a dressing with leached ashes, when put down to grass, at the rate of from 6 to 10 loads of 14 bushels (89 to 144 bushels) each. For three years past I have adopted the following plan, which has saved both money and labor, with, I believe, equal success. One of my neighbors has tried it with rye this year, and speaks of it highly. To each load (say 30 bushels) of fine soil or sods, I add a layer of potash, 50 lbs.; then a layer of half as much soil, and a bushel of lime; and so on alternately, till I mix as much as I want. In a week turn it over—the potash will be pretty much dissolved—and in another week fit to use. To each acre, after the land is last plowed, I spread with a shovel 3 loads, containing about 150 lbs. potash, and harrow it in; then sow. I prefer it to ashes. The potash I procure at the Inspection Warehouse, N. Y. called scrapings, at about $3 per cwt.

In hope the above hasty remarks may be useful to some of your readers.

I remain yours, truly, JOHN HAROLD.

To J. S. SKINNER, Esq.

* This we suppose must be the refuse lime of kilns, delivered at the kilns. [*Ed. Farm. Lib.*

NEIGHBOR MANUFACTORIES:

THEIR CONVENIENCE AND UTILITY.—EXAMPLES IN MARYLAND.

WE have alluded elsewhere to the convenience of small neighborhood manufactories, for consuming the wool and supplying the cloth required for every County in the Southern States. Of such factories we have examples in the "Powder Mill" in Montgomery, and the "Paint Branch" Factory in Prince George's County, Maryland. The proprietors of these small, snug establishments, advertise in that useful and well-conducted paper, the Marlboro' Gazette, that they will keep on hand a general assortment of woolen goods, which they will exchange for wool, on reasonable terms; and they give notice of certain stores in Alexandria, Washington, Baltimore and certain other places in the neighboring Counties, where their woolen goods will be kept on hand, ready to be *exchanged for wool*, so that the farmer can either buy his cloth, at once, and pay for it with his wool, or have his wool manufactured for his own use, as he may prefer, and according to his own notion and purposes.

We feel persuaded that "*Chase's Card Spinner*" might be introduced with economy in all such establishments, as by it refuse cotton may be made to take, in part, the place of wool, which is more costly. The cotton thread is wrapped effectually in wool, and a cloth produced that, according to the samples we have seen, comes fully up, in the matter of firmness, strength, warmth and durability, to all that has been said in favor of this machine.

It is gratifying, at any rate, to know that for once a new invention which promises useful results to the agricultural community, is in the hands and under the control of a gentleman who is under no necessity and whom no necessity could prompt to mislead the public.

As to the particular manufactories to which we have alluded, we know nothing of their particular management; nor is the FARMERS' LIBRARY under any *special* obligation to consult the interests of *Maryland*, contrasting the little support it has received in that State with the much greater which has come from more distant ones. The proprietors refer, however, to gentlemen of the highest respectability. We instance these factories only to show that convenient neighborhood establishments, on a moderate scale, requiring, as we suppose, not much capital, do exist, and, as we believe, deserve to be recommended as the proper, legitimate successors of the old hand-looms, such as were in such common use in old times, and may still be seen along the country roads in the "Old North State." Well would it be, as we believe, if we could see such moderate establishments scattered over the whole country, drawing their materials for manufacture and subsistence each from its own neighborhood. Better than to have the whole business monopolized by one or two States, where overgrown works that cost millions of dollars monopolize the business, giving subsistence to thousands, and immense fortunes to one or two. Let us cherish systems that will best secure, not millions to a few, but competence to many—such as will best secure *independence*, as far as possible, not only to the nation, but to every State, and every County, and every neighborhood, for its food, clothing *and education*. The prices designated at these Maryland factories are—

Heavy fulled kerseys	3-4 wide,	32	cts. per	yd
Do. do. do.	6-4 "	64	"	"
Heavy kerseys	5-4 "	25	"	"
Plain linseys	5-4 "	25	"	"
Striped linseys	5-4 "	30	"	"
Twilled or plain flannels.	5-4 "	30	"	"
Sup. blankets, all wool.	10-4 "	75	"	"

All other goods in proportion to the above. All orders will be executed in the best manner, and the utmost punctuality observed in all their engagements.

The proprietors go on to designate the particular places at which they will attend, on given days, for "receiving wool, or taking orders."

What is to be observed, though it does not in the least surprise *us*, is, such *exact agreement in all the prices*, between the two establishments.

How easy for the followers of other trades and occupations to come to these understandings! How difficult for farmers to do the same thing! The spiders in the center of their webs are always well advised of what is going on; their feelers ramify to every point of the compass. The poor flies are buzzing about here and there and every where, and never dream of danger until they are caught. In the affairs of mankind, who are the *spiders*?—who the *flies*?

OIL-CAKE.

Some of the Results of the Analysis of Oil-Cake, by the Agricultural Chemical Association in Scotland.

1. That the per-centage of the protein compounds, in the analysis called gluten and albumen, is nearly equal to what is contained in peas and beans, and that, therefore, for the production of milk for the cheese-dairy, and also for laying on muscle, oil-cakes are as valuable as beans, peas, or clovers. This is a result somewhat unexpected, inasmuch as the value of oil-cakes in the feeding of stock has hitherto been supposed to depend very much upon their power of laying on fat: in other words, upon the per-centage of oil they contain.

2. The proportion of oil in these cakes is greater than is naturally present in any species of grain or pulse usually cultivated. Oats contain as a maximum about 7, and Indian corn about 9 per cent. of oil, but these cakes contain 12 per cent., and are, therefore, in their ability to supply fat to an animal, superior to any of our cultivated grains.

3. These oil-cakes leave six per cent. of ash, of which one-third consists of phosphoric acid: 100 lbs. of oil-cake, therefore, contain 2 lbs. of phosphoric acid. On the other hand, our common kinds of corn—wheat, for example—leave only two per cent. of ash, of which one-half consists of phosphoric acid, or 100 lbs. of wheat contain 1 lb. of phosphoric acid. *Therefore*, for laying on *bone*, or for supplying the materials of bone to growing stock, *oil-cake is twice as valuable as wheat*, weight for weight, and *more than twice as valuable as oats or barley* which are covered with a husk.

4. Again the same reasoning shows that, as grains of all kinds draw their phosphoric acid from the soil, these oily seeds will exhaust the soil of its phosphates to a much greater degree than our corn crops: 100 lbs. of linseed will carry off twice as much of them from the soil as 100 lbs. of wheat.

5. But the same circumstance supplies an additional reason why the manure of *full-grown* store stock fed upon oil-cake is so much richer than that obtained by the use of any other kind of food. It is richer,

(*a*). Because the proportion of the protein compounds (albumen, &c.) in the oil-cake is greater than the fattening animal can appropriate, and thus much of them passes off in a more or less changed state, and is mixed with the dung.

(*b*). The oil also is in larger proportion than can at times be laid on their bodies even by fattening stock, and this unquestionably contributes to the fertilizing quality of the manure.

(*c*). But the full-grown animal appropriates scarcely any of the *phosphates*—the whole of these therefore, which the animal consumes in its food, appears again in its dung. And the oil-cakes being richer in these phosphates weight for weight, than any kind of corn used for food, the dung thus made is also richer in these phosphates than that which is obtained from animals fed upon almost any other kind of food.

THE HORNED PHEASANTS OF THE HIGH MOUNTAINS OF INDIA.

[The Horned Pheasant.]

THE Pheasants *(Phasianidæ)* form one of the most interesting groups of the feathered race, whatever be the point of view in which we contemplate them. Their beauty of form and the splendor of their hues have attracted universal admiration. Many dazzle by the metallic lustre of their plumage, which gleams with green, and blue, and gold. Such, for example, is the case with that gorgeous bird, the Impeyan Pheasant *(Lophophorus Impeyanus)* of the Himalayan Mountains, which it has several times been attempted to bring alive into this country, but hitherto without success. Others, as the Golden Pheasant of China *(Phasianus Pictus)*, delight us with the richness and multiplicity of their tints, which contrast admirably with each other. The Common Pheasant, now naturalized over the greater portion of Europe, is exceedingly beautiful, but it is far surpassed by many of its congeners, of which we may mention that elegant Chinese species, the *Phasianus Reevesii (P. venesatus*, Temm.), of which a fine specimen adorns the Gardens of the Zoological Society. It is to be observed, however, that this beauty of plumage is confined to the males; the females are universally attired in a sober dress of brown—often, indeed, exquisitely penciled with spots and zigzag lines, but totally destitute of the brilliant hues which glisten in their mates. Independently, however, of the beauty of the

Pheasant tribe, there is another point of interest which cannot be overlooked—we allude to their value as it respects the table. The flesh of all the gallinaceous birds affords to man a wholesome and nutritious food, and that of the Pheasants is, deservedly, in high estimation. Hence the introduction and naturalization of the Common Pheasant in Western Europe is a positive good; and it is desirable, therefore, to add other species to the list of those which are acclimated with us.

The Pheasants (family *Phasianidæ*) are all natives of Asia. The Common Pheasant was originally brought from the river Phasis, by the Greeks, in some of their earlier expeditions; that of the Argonauts, under Jason, has the popular credit of having introduced it. However this may be, the name given to the bird by the Greeks, (*φασιανος*,—in Latin, *Phasianus*)—of which all our modern European names for it are merely corruptions, points to the banks of the Phasis as the place from which it was derived; and, to the present day, the Pheasants of Mingrelia (the Colchis of the ancients) are celebrated for their beauty and size. Extreme brilliancy of plumage is, in general, the characteristic of birds dwelling in torrid regions beneath a glowing sky; such is not the case as it regards the most gorgeous and beautiful of the Pheasant tribe. On the contrary, the high mountains of the Himalaya, bordering upon the limits of perpetual snow, are tenanted by the most splendid of this family. The Impeyan Pheasant is an example in point: adapted for regions where the temperature is, at the most, only moderate, and often at a low degree, this noble bird soon dies when taken from its Alpine home into the burning lowlands of India; and hence arises one of the difficulties in the way of our obtaining living specimens in Europe. But, besides the Impeyan Pheasant, the Himalaya chain of mountains presents us with a group or genus of this family, containing a very limited number of species remarkable both for their great beauty and their characters, which indicate an affinity to the turkeys—between which group and that of the genuine Pheasants they constitute an intermediate link. The genus to which we allude is that termed *Tragopan* (Cuvier), of which three species only are known. They are easily distinguishable from all the rest of the *Phasianidæ* (at least as far as regards the male birds), by the presence of large throat-wattles, or naked carunculated flaps of skin (resembling those of the turkey), which extend from the naked cheeks, spread over the throat, and proceed down each side of the neck; while from behind each eye rises a soft fleshy horn. The whole of these appendages are capable of being contracted and dilated at pleasure, or at least in accordance with the emotions of anger, fear, &c., as we see in the male turkey: the tints of the horns and wattles are rich purple, mingled with scarlet, and are most probably changeable from one hue to another. The tail is broad and rounded, and the plumage is dotted with round spots of white on a brown or red ground, the effect of which is very pleasing.

Of the three species that are known at present, two have been but recently introduced to Science—nor, indeed, is our acquaintance with the one first described of distant date. The first species is the Horned Pheasant of Nepâl (*Tragopan satyrus*). It was first described and figured by Edwards, in the third volume of his "Natural History of Birds," p. 116—partly from a drawing sent from India to Dr. Mead, and partly from a head of the bird preserved in spirits, which accompanied the drawing. Edwards's third volume is dated 1750, and his plate was etched in 1749, as appears by the date inscribed in the corner. The alliance of this bird to the turkey was not unobserved by this writer, who in his catalogue places it among that group, while in his account of it he observes that it is, "for shape of body and proportion of parts, pretty much like a turkey, and may be ranged with fowls of the poultry kind." Dr. Latham, in his "General History of Birds," states that these birds, though by no means common, "are not unfrequent in drawings done in India; and are particularly well figured in those of Mr. Middleton and Lady Impey." . . . "In the drawings of Sir J. Anstruther it is said to inhabit the snowy regions of Thibet." Its size is between that of a fowl and turkey. It is beautifully figured in Gould's "Century of Birds."

The second species is from Thibet and the Chinese borders, and was first described and figured in the "Indian Zoology," by Mr. Gray, under the title of *Tragopan Temminckii*. Of this species, as rare as it is beautiful, a living specimen, presented by J. R. Reeves, Esq., is now in the Gardens of the Zoological Society, and constitutes, as far as we are aware, the first example of one of the present group having reached our shores alive and in health. It was procured in China.

The third species is from the northern range of the Himalaya, and was first illustrated in Mr. Gould's "Century," under the name of *Tragopan Hastingsii*; the figures are those of an adult and young male, and adult female. In size this species rather exceeds the *Tragopan Satyrus*—its total length being 23 inches.

Could the Horned Pheasants, or the refulgent Impeyan Pheasant, be imported in sufficient numbers into our island (and we trust this will be soon accomplished), there is little doubt but that they might, with proper management, become naturalized. There is nothing to fear with regard to cold. They are the natives of a cold or temperate region—they verge upon the line of perpetual snow—so that the wooded hills of our portion of the globe would not be very uncongenial to their constitution. Nor would there be much difficulty in providing them with suitable food. Grain forms the staple diet of all the gallinaceous tribe; hence the Peacock of India, the Guinea-Fowl of Africa, the Common Pheasant of Asia, the Turkey of America, have equally become naturalized and have multiplied in our western regions; to say nothing of the Common Fowl, the origin of which (the Jungle Fowl) is from India, but which, from time immemorial, has been reclaimed or domesticated, and has long since spread in this condition over the greatest portion of the globe. Thus the food of the gallinaceous tribe, and the hardiness of their constitution, fit most of them, at least, for a very extensive diffusion throughout the globe; and in this we may discern a wise arrangement of Nature, inasmuch as, of all the feathered race, they are the most valuable to man, and are at once ornaments around his dwelling and wholesome delicacies on his table. If to our poultry-yard could be added the Horned Pheasants, so closely allied to them in form, habits, and general manners, they would constitute a most important acquisition, and produce a full reward for the trouble bestowed in their naturalization.

[London Penny Magazine.

MARL.

A LETTER ADDRESSED TO THE AGRICULTURAL SOCIETY OF JEFFERSON COUNTY, GA.

BY J. H. HAMMOND. [*Concluded from May No.*

The presence of lime is also known to influence the decomposition of the silicates of potash and soda, and at the moment of decomposition, both the silica and alkali are soluble. Thus, lime aids materially in supplying these essential elements to plants. Whether it does so by its alkaline properties, or by concentrating carbonic acid, or merely by its catalytic power, has not been settled. The silicate of lime itself, when rendered soluble by the decomposing influence of carbonic acid, sometimes, as I have stated, becomes, in their absence, a substitute for the silicates of potash and soda. It is this combination also, that renders light, sandy lands more consistent, which is one of the most important effects of lime on such lands—particularly on the light uplands so extensively planted on this side of the Savannah, and in your County. The fact is unquestionable. It is usually referred, as is the opening of stiff lands, to the mechanical influence of the lime, but the cause assigned here, as in that case, is not adequate to the effect.

The red and brown lands in your County are colored, as they are everywhere else, by iron.—You have no doubt observed, that after continued cultivation, some of the best of them cease to become productive without much apparent loss of vegetable mould, and are not rapidly restored either by rest or manure. Among other causes, this is owing to a considerable extent, to the excessive oxidation of the iron in consequence of its exposure from plowing, to the atmosphere, whence it extracts oxygen, a process you see constantly exemplified by the rusting of old iron. It becomes what is called a peroxide of iron, which is very injurious to vegetation.—Lime neutralizes all acids, and if put upon these lands in proper quantities, it will neutralize a portion of the acid in the iron, and convert the peroxide into a protoxide of iron. which, if not actually beneficial, is at least harmless to plants. You have too, in some of your soils, the sulphuret of iron, so often taken for gold ore. This, on exposure to air, absorbs oxygen, which produces sulphuric acid, and then forms the sulphate of iron or copperas, which is poisonous to plants. If lime is put on the land it will arrest the accession of the sulphuric acid thus formed to the iron, and prevent the formation of copperas. But what is more, combining with the sulphuric acid itself, it forms sulphate of lime, commonly called plaster of Paris, one of the most highly prized of all mineral manures, and an element in all, or nearly all plants. Lime has also the power of forming plaster in the same way when it comes in contact with the sulphate of silicon, which is supposed to exist in all soils. It combines also with sulphuric acid, arising from vegetable decomposition or any other source, and produces this valuable salt.

The sulphate of lime, called also gypsum, as well as plaster of Paris, must exist to some extent in all soils, as it is found in almost all plants. But, like the carbonate of lime, it is seldom to be detected by chemical tests. It may also be eliminated from unknown combinations by the vital action of the growing plant. But in the way I have mentioned, it will undoubtedly be formed in greater abundance in all soils, by the application of lime. Sulphuric acid itself is often used as a manure, but experience has fully established the fact, that it is of little value except on calcareous soils; and what is more remarkable, that sulphate of lime will also act with far greater effect on limed lands. I tried some of it myself the past year on marled land. I rolled the cotton-seed in it, previously to planting them, and thus applied it at the rate of only one peck of the plaster per acre. I am satisfied that the product, on the few acres to which it was applied, was one-third greater than on similar adjoining land, marled also, but not plastered. I anticipate, therefore, the greatest benefit from the use of plaster after marl. I should remark, however, that it has not been found invariably beneficial even on limed lands. In England, and on our coast south of Long Island, little advantage has been derived from it. Two probable causes have been assigned for this: the influence of sea air, which has not been satisfactorily explained, and the probability that the lands in the region mentioned have derived a sufficiency of gypsum already from the sulphuret of iron, or other sources. Very little is required for plants: one peck per acre applied to the moistened seed will probably have as much effect, for one year at least, as any other quantity. In the last dry season, it had on my land double the effect of a bushel sown broadcast. Five to ten bushels are sometimes applied.

Phosphate of lime is even more esteemed for a manure than the sulphate. It is sometimes called the "Earth of Bones," as bones contain over 50 per cent. of this salt. Being less abundant than sulphate of lime, it is much more costly. Bones are transported across the Atlantic to England, to be used as manure. Several hundred vessels are now engaged solely in transporting bones from various parts of the world to England. This phosphate is also an essential constituent of plants, though rarely to be detected in soils. But phosphoric acid, like sulphuric, arises from vegetable decomposition, from phosphuret of silicon, and perhaps other sources. If lime be present in the soil to fix it, not only is the vital action of the plant relieved from producing it, but much is probably saved that would otherwise be lost. The ash of cotton-seed contains considerably more of this acid than bones do, and hence the immense value of this seed as a manure. But its effects are proverbially transient. With lime in the soil sufficiently abundant to fix the phosphoric acid, cotton-seed would be a manure almost as permanent as bones. But to detail all the operations of lime in the soil, in assisting to prepare food for plants

out of the vegetable and mineral substances which compose it, would require me to write a much longer letter than you would read with patience. I have touched on the most prominent only. The general consequences, however, which follow, and which are regarded as arising peculiarly from its applications to land, require to be glanced at.

By opening stiff land, it renders it more permeable to the air, and more subject to atmospheric influence, while its surplus water more readily escapes. Quick-lime, when saturated, holds more water than common clay, such as yours, but yields it more readily to heat, and is therefore of great use in drying damp lands and rendering them warmer. But it does not give up its water so promptly as sand, and therefore renders that more retentive of moisture. In fact, marl containing 50 per cent. of carbonate of lime, and the residue chiefly fine sand, will absorb more water than the common clay of your lands, and retain it as long. During the extreme drouth last year, at one time, the plow turned up dry dirt in a field of mine marled that year at 100 bushels per acre, and not yet sufficiently mixed in the soil, while several days later, without intervening rain, in a soil equally sandy and having less vegetable matter, but marled four years ago with 200 bushels per acre, earth quite moist was turned up at the same depth. You will readily perceive and appreciate the value of marl in this respect.

By rapidly neutralizing the noxious, and vivifying the good properties of the subsoil brought up in breaking land, lime enables the farmer to deepen his soil more speedily and without risk. Mr. Ruffin's experience confirming the theory, is decisive on this point; mine, so far as it goes, is to the same effect. Lime undoubtedly hastens the maturity of crops. Writers abroad state that it advances them a fortnight. Before seeing these statements, my observation of my own crops had led me to the same conclusion. Two weeks gained to the cotton-plant is equivalent to a degree of latitude—a very material gain to us.

It is also stated on good authority, that lime in land improves the *quality* of every cultivated crop—and that it has the effect of increasing the fruit in proportion to the weed. It is well known, that while the straw, stalks, &c. of plants contain more of the carbonates, the seeds contain more of the phosphates. If the application of carbonate of lime increases the fruit more than it does the stalk, its indirect influence in producing phosphates is greater and more important than has been generally supposed, and its value is enhanced in a corresponding degree. It is said also to extirpate many noxious weeds. However this may be, I can testify that it gives great luxuriance to the growth of all the grasses with which our crops are infested. This, to the mere corn and cotton planter, may be no recommendation of it. I will state, however, that in a field planted in cotton in 1844, and rested last year, which usually produces a heavy crop of bog-weed, when turned out, there came up, although it had not been plowed at all, an uncommonly fine growth of crow-foot; which I can only account for from its having been marled. The part longest marled had the best crow-foot.

Lime is thought in England to prevent smut in wheat—to destroy many injurious insects—to preserve sheep pastured on land after its use from rot and foot-rot—and it is everywhere regarded as improving the healthfulness of drained lands. In short, it is now generally agreed, not only by scientific men, but by the best and most experienced farmers in every part of the world where it has been properly tested, that "Lime is the basis of all good husbandry,"—in which opinion I fully and cordially concur.

In endeavoring to furnish you with something like a theory of the action of lime, I have stated some—perhaps many things—which are questioned by men of great scientific attainment.—Agricultural Chemistry—indeed the whole science of chemistry—may be said to be yet in infancy. If it is difficult to penetrate the arcana of passive nature, it is far more so to investigate those active operations which are conducted in the air and under the ground, in the formation of plants, complicated as they are in addition by the yet unknown vital agency of the plant itself. Although, on the whole, the art of Agriculture has been vastly advanced by the discoveries and experiments of chemists, and he who shuts his eyes to the light they are constantly shedding for the benefit of farmers, is now, and will soon be much farther behind his age; still it is well known that great absurdities have been put forward, and with the utmost confidence, by the most eminent characters in modern science. In speaking, then, of the peculiar action of any of the elements out of which plants are formed, and its agency in the mysterious operations consummated in the production of a full-grown, matured and fruit-bearing plant, it is not only becoming, but necessary that every one, most especially a mere farmer like myself, should express opinions with great diffidence and caution, and hesitate before drawing, even from established facts, inferences of important and extensive bearing. In view of this, I ought not to omit to state to you, that within a few years past, a sweeping theory has been suggested by one of the first chemists and most popular writers of the age, that has found some able supporters, and which if true, apparently upsets everything that has been said of the effect of lime in furnishing food to growing plants out of decayed vegetable matter. Dr. Liebig asserts that that the decayed vegetable matter of the soil called humus, or mould, affords no direct nourishment whatever to plants. That they derive all their organic constituents from the atmosphere, and only their inorganic from the earth. The organic constituents of plants are those which are dissipated when they are burnt and in most vegetables amount to from 97 to 99 parts in 100. The organic constituents compose the ashes which are left by fire, amounting usually from 1 to 3 parts in 100, in some rare cases to as much as 12 per cent. The only nourishment which, according to this theory, the soil affords to plants, being thus limited to from 1 to 3 parts in 100, the utmost direct influence of good or bad soils, of manure of all kinds—of lime, alumina, silica, and all mineral elements, can reach no farther than to the modification of an hundredth or at most a thirty-third part of the crops we cultivate. It follows that the world has all this time labored under a most important error in estimating at such vastly different values what we call rich and poor lands. That the effects of manure are in a great measure fanciful, or at least that from 1 to 3 lbs. of ashes are equivalent to 100 lbs. of vegetable matter, as an application to the soil, and that it is useless labor to put on manure in any other form. Knowing as we do that a single drop of prussic acid will almost instantly extinguish life, it would not be fair to deny very great influence to even the

smallest proportion of inorganic matter in the production of plants. And since Liebig concedes that until the leaves are formed, the plant derives its carbonic acid from an artificial atmosphere generated by the contact of humus in the soil with the air, it would not be safe to denounce this theory in the present state of science, as absurd. It is admitted too on all sides that plants do assimilate carbon from the atmosphere, and it seems established that ammonia descends in rain water. However true this may be, and though Liebig's theory was established as perfectly so in all its parts, I should think it most prudent to hold on still to what experience and rational deduction have taught us of the influence of vegetable mould on crops, in the hope that farther discoveries might harmonize old facts and new truths, especially as none of us would set about improving the atmosphere, or desire to add more carbonic acid or nitrogen to it, since any material increase of these elements would render it fatal to animal life. Indeed, no scientific discoveries or force of logic can ever, I am convinced, for an instant shake your confidence or that of any practical farmer, in vegetable mould and compost manure; or lead you to doubt that the amount of your crop, if properly tilled under fair seasons, depended in all other respects wholly and solely on the quality of your land. Whether the soil furnishes 1 part or 99 parts in a hundred —you have too often seen plants on the same acre subject to the same identical atmospheric influences throughout, varying from good to worthless, according to the soil, to question the important fact that by improving your land you improve your crop in the same ratio precisely, and that by exhausting it you equally deteriorate the crop.

In fact, depth of soil, by which we mean depth of decayed vegetable mould mixed with sand, clay, &c., has been with you, as with all the world heretofore, a criterion, and a never failing one, of the value of land, and so it will forever continue to be, I venture to assert. If then, as I believe, and you will probably agree, plants derive their most important constituents of all kinds from the soil and from vegetable mould, the value of lime in the soil is by no means limited to its action on the mineral or inorganic constituents of it, but extends to the production also of those organic elements which preponderate so immensely in all vegetation.

But your inquiry of me was in reference to marl. I must, therefore, remind you again that all which has been said of lime is true of marl. If it is slower than lime in its early operations, that is more than compensated by many advantages which it possesses. This is becoming so well understood that, wherever the same quantity of lime can be placed on land as cheaply in the form of marl, it is rapidly superseding the use of it in all other forms. Marl contains, besides carbonate of lime, other valuable constituents. Its silex and alumina, though fine in quality, are not of much consequence, since they are never thus applied in sufficient quantities to affect the soil materially. But some marls—those in Virginia, for instance—contain sometimes sulphate of lime and the valuable green sand of which I have spoken. As the sulphate of lime exists there in Eocene marl, it may be discovered in our formation. I have seen green sand in specimens from several localities in this State. A deposit of green sand, such as is found and used to an immense extent in New-Jersey, would be more valuable in your County than the richest gold mine in the world. There is none of it at Shell Bluff. I have already spoken of phosphate of lime. In marl from Ashley River, in this State, which belongs to the same formation as our marls, 5 per cent. of this phosphate has been discovered. From some crude experiments of my own, I am inclined to believe it exists in some of the marls at Shell Bluff, and probably in yours—to what extent I would not undertake to say. But 5 per cent. of it would give you the equivalent of 9 bushels of ground bones in every hundred bushels of marl, which alone would be worth more than the whole cost of applying that quantity of marl, though the expense of it might be five dollars. We cannot, however, expect to find it in such quantity in all the marls we use. Those will probably be richest in it in which are found remains of bones and teeth. In the shell marls on the Rhine, recent analysis has detected an important proportion of azote, derived, it is supposed, from animal matter. This is the most powerful, as you know, of all manures. There is every reason to believe that a scrutiny equally rigid would disclose a valuable proportion of it in our shell marls here.

The duration of marl in the soil is undoubtedly greater than that of lime. The question of the duration of calcareous earth applied to lands is one of great importance itself, and about which you will, no doubt, desire to be satisfied before attempting to use it. I have mentioned already that the ancients regarded marl as producing its effects from 10 to 80 years. Lord Kames states an instance of their being observable for 120 years, and Mr. Ruffin another of 60 years. Few or no records of such experiments have been handed down from generation to generation. In those countries where lime and marl have been used most extensively and for the longest period, it is impossible to say how long the land produced before they were applied at all, in comparison with its production now. Of late years, more accurate accounts have been kept. The peculiar effects first observed to follow the application of lime have been thought to disappear or materially diminish at various periods, reaching from 4 to 40 years, according to the amount applied and other circumstances. It is supposed by writers and farmers abroad that about 3¼ bushels of it are consumed per annum by the crop, and that in general the influence of any quantity will cease in from 12 to 20 years. But these conclusions are not to be relied on. It is certain that no crop will take off so large an amount as 3¼ bushels, and the loss from other causes is altogether indefinite.—While though, at the end of 20 years, the same precise effects as at first may no longer be observable, it by no means follows that this may not be owing to the want of proper applications of other manures that would excite the lime again to its original action. Mr. Ruffin thinks that marl, once placed on land, will endure as long as the clay and sand in it. Though we might not indulge fully in this belief, I am of opinion that it will last for a period which may be called indefinite, from its remoteness—particularly when crops are grown such as we cultivate. Irish potatoes consume more lime than any other crop, perhaps; nine tons, which are sometimes grown upon an acre, though not with us, abstract about 266 lbs. or say 3¼ bushels—but 260 lbs. are contained in the tops, which we never take from the land. A thousand bushels of turnips, tops and all, consume about 2 bushels

of lime. Wheat, the cultivation of which is extending among us, requires for a crop of 25 bushels, straw and all, about 9 lbs. or a half peck.—Cotton and corn do not require more. Seed cotton sufficient to make a bale of 400 lbs.—that is, 1400 lbs. in the seed—will consume about 3 lbs.; and most of that in the seed which is invariably restored to the land. If we treble this amount for the stalks and leaves—which, however, usually rot on the ground—the exhaustion of lime by our heaviest cotton crops will not exceed half a peck when every thing is taken off. Thirty-five bushels of corn will consume only about 1¾ lbs. of lime; if we add six times this amount for the cob, shuck, blades and stalk, it will not require more than cotton or wheat. I am not aware that our cotton-stalks, or our corn-cobs, shucks, stalks or blades, have ever been analyzed; but I have, I think, fully allowed for the lime they may contain. And, at these rates of exhaustion, 30 bushels of lime, which is about the quantity contained in 100 bushels of marl that has 60 per cent. of the carbonate, will supply the wants of our usual crops, when much larger than we now average, for 240 years, if the land was cultivated so long without rest or restoring anything to it. The consumption of the crop, then, is next to nothing. The loss arising from other causes is undoubtedly greater.—Quick-lime dissolves in 750 parts of water. A fall of 44 inches of rain, which is less than the annual average quantity that falls here, would afford water sufficient to dissolve 170 bushels per acre. Quick-lime, when spread on land, however, becomes a carbonate, and nearly insoluble, too soon to lose to this extent. Still, a considerable amount might be lost in this way, by a heavy rain immediately after liming.—Lime, after being burnt, falls into a powder.—Its minute particles are forced by showers, aided by deep plowing, into the subsoil; and much may be thus carried off. When these things are considered, it is obvious that all the lime in land may in time be exhausted, as it has been from our "drifted" soils. But the chances of its duration are greatly increased by being applied in the form of marl. Being a carbonate, it is soluble by the carbonic acid in rain-water only in small quantities, and ages must elapse before it could dissolve and carry off any great amount; and not having been reduced to a fine powder, its particles are too large to be readily driven down into the subsoil, below the reach of the plow. Without, then, assigning any precise limit for the duration of marl, I think it may be safely concluded that the effects of a sufficient application, under proper culture, will last for a longer period than we can conceive ourselves to have any direct interest in the land to which we may apply it.

With regard to what is a sufficient application, there is a great diversity of opinion, and consequently of practice. Viewing it chiefly as a direct manure, in many parts of Europe, lime is applied at the rate of 8 to 10 bushels per acre annually—in others, at 10 to 12 bushels every third year; and again, in other parts, at 40 to 50 bushels every twelve years. But as its indirect effects are as important, and far more numerous than its direct, and it is therefore an invaluable elementary constituent of soils, the true rule for its application undoubtedly is to furnish the soil at once, if possible, with as much as its constitution will bear, and to repeat the dose as frequently as the improvement of that constitution will permit, since the more lime, everything else being in due proportion, the larger the crops. Acting on this principle, many farmers in Europe put on 3 to 400 bushels of lime at once, and sometimes 1,000. Such liming is probably excessive there, and in our climate would be utterly destructive. Marl, however, containing from 50 to 70 per cent. of carbonate of lime, may be safely used in four times the quantity we can use quick-lime. The usual dose of marl of that quality in Virginia varies from 2 to 300 bushels. But more can be applied even in Virginia than here. The hotter the climate, the more caution is necessary, in the first dose at least; though this is greatly dependent on the condition of the land to be marled. In the hot and dry climate of Egypt, the fruitful Delta of the Nile contains 25 per cent. of carbonate of lime, which is equivalent, in one foot depth of soil, to some 20,000 bushels per acre of marl containing 50 per cent.; but that soil is much deeper, and its vegetable mould inexhaustible. Depth of soil, and the amount of vegetable matter in it, must chiefly regulate the quantity of marl. M. Puvis has given an interesting table in reference to this. He thinks that we may give to a soil three inches deep, 40 bushels of marl, containing 60 per cent. of carbonate of lime, or 50 bushels containing 50 per cent.; and to a soil six inches deep, 80 bushels at 60 per cent. or 100 at 50 per cent. He does not refer to the vegetable matter, or other circumstances of the soil. I presume that the depths of the soils you cultivate range between the extremes stated, or at least that you seldom plow, and would not, therefore, mix the marl deeper than six inches. I think the amounts he specifies are very safe. As some of my lands are similar to yours, and our climates the same, I will give you my experience on this point. I began to marl by putting 200 bushels per acre, that averaged about 60 per cent. carb. of lime. On old mulatto land, with a soil about six inches deep, and containing about 4 per cent. of vegetable matter, I have not yet, after four years, perceived any injury from it. On lighter land, containing less vegetable matter, and a soil four to five inches deep, I discovered marl burns the second year. Previously to this discovery, however, I had taken the alarm, and reduced the quantity to 150 bushels, on land similar to the last mentioned. On all the thin spots I perceived the "marl burn" from this amount. I then farther reduced the marl to 100 bushels per acre, from which I have as yet perceived no injury. Being now about to finish the marling of all my open land, it is my intention to go over it again, and to add 50 bushels per acre at a time, until I have given to all 200 bushels. I shall by no means, however, venture to do this until, by resting and manuring, I have also furnished to it additional vegetable matter.

I think I may safely recommend you to apply 100 bushels per acre, of the richest marl you have, to any land that now gives you remunerating crops, and 200 bushels or more to your best lands. If they are low and sour they will bear still more. I am now putting 250 to 300 bushels on some swamps I have drained, which have several feet of vegetable mould. I should not be afraid to put 1000 bushels per acre on such land—though here I think quick-lime would be the best application, as it would hasten decomposition.

It is always most convenient to apply marl to resting lands, and it is also a great advantage to

secure, by this means, a new coat of decaying vegetation to start with. So new grounds should be marled the first year; if marled before clearing it would be better still. Very old and exhausted land should be rested two years previously to marling; and, in all cases, thin knolls should, if possible, be manured when marled. But a little experience will furnish you the best guides in this regard: you will soon discover all the dangers, and learn to apply all the remedies.

Experience will also teach you, in a very short time, the best and most convenient methods of digging, carting and spreading marl. There are some difficulties connected with digging from marl pits, which, with the means of overcoming them, are stated in Mr. Ruffin's work. They arise chiefly from water, which must be drained off, or pumped out, according to circumstances. I have no experience on this point. My marl is cut from the face of the cliff at Shell Bluff. It is estimated that if a stratum of marl is 12 feet thick, 12 feet of covering may be removed to procure it, without hazarding too much. But should you find marl, you need not apprehend much danger of working through it. The great formation, of which it is a part, is of unknown depth. Over 100 feet of it is exposed at Shell Bluff; it has been penetrated more than 300 feet in Charleston.

In hauling out marl, the most economical method is to use carts with two mules or horses. In a cart properly made, they will haul 18 bushels at a load as easily as one mule will haul 6. The carts should be made with three shafts, so as to divide the weight of the load equally between the mules, and the tread of the wheels should be 4 inches—axle-trees of iron. In putting on 100 bushels to the acre, the land should be divided by furrows into squares 28 yards each way. This will give 6 to the acre. A load of 18 bushels to each square will rather exceed 100 bushels per acre, but some will always be lost. The full effect of marl cannot be felt until it is thoroughly mixed with the soil. Hence, the first year, little is to be expected from it, and it seldom reaches its maximum until the fourth crop—not always then. Its effects may be hastened, and, what is also important, rendered equal, by spreading it with regularity over the land. It is best, therefore, to sow it broadcast with the hand. Each laborer should take his square and spread the pile, using a tray or board to assist him. A hand will spread 9 piles of 18 bushels each in a day.

The distance to which marl may be carted depends altogether upon circumstances—one of which is the quality of the marl; another, that of the land; others, the facilities for digging, state of the roads, &c. Along the coast of Scotland, it is transported by sea from 80 to 100 miles. I have been very recently informed that at a single marl bank on James River in Virginia, 10 rigged lighters are now engaged in delivering marl to a distance of from 8 to 20 miles up and down the river, receiving 3 cents per bushel for it, though it is much inferior to ours in quality. The marl I use averages about 60 per cent. of carbonate of lime. I cut the whole of it down at Shell Bluff, and boat it 12 miles up the Savannah River, re-land and cart it. I have marled about 700 acres within a mile of my landing here; but I have hauled some marl 4 miles, and have spread it on about 500 acres, the nearest part of which is over three miles from the river. This is of course very expensive; but I think it profitable, notwithstanding. If I could lay down any rule to regulate the cost of marling, it would be this: That where land is deficient in lime, it would be a safe operation to expend an amount equal to the present value of it, if so much should be necessary to marl it sufficiently. This rule I suggest upon the principle that it would be profitable to pay twice for land, if you could thereby double its production without materially increasing the cost of cultivation.

You will naturally inquire whether any one might reasonably calculate on doubling the production of his land by marling. I believe he may, if the marl is judiciously applied and the proper system of after-cultivation adopted. I have seen but few statements of the actual results of marling in Europe. It is said in general terms to produce a great increase, though occasionally it is mentioned that the crops were doubled. So perfectly established is the use of lime and marl there, that every one who can procure them uses them as a matter of course. It is not considered an experiment, and tables of results are not therefore given—at least I have seen none. A few years ago, Mr. Ruffin addressed interrogatories touching the effect of marl as exhibited in the crops to a number of the most respectable farmers of Virginia, who had used it, and received answers from twenty-two, many of whom had marled extensively and for a number of years past. These answers were published in the Farmer's Register and in Mr. Ruffin's Report of his Agricultural Survey of South Carolina. Their marl was of various qualities, applied in various amounts per acre, and on different kinds of land, which had been subjected generally to very severe cropping before. No one of these estimated the increase of his crops from marling at less than double, and some of them rated it as high as 400 per cent. I have no doubt that, under favorable circumstances and good management, the last-mentioned increase, enormous as it is, may be often realized. The prospect, however, of doubling the crop with reasonable certainty, is promise enough, one would think, to set every one to marling who can do it within the cost I have mentioned. I have not myself yet doubled my own crop with the use of marl, nor might the practical results of it, which I ought to state, be so striking to a careless observer as he might expect, after all I have said on the subject. They satisfy me, however; and I feel perfectly certain that in a short time the crops on all the land I plant will be at least doubled, from the effects of marl alone, and much more than doubled in consequence of other additional applications I am making. I commenced marling in November, 1841. I marled only 175 acres for the crop of 1842, the results of which I reported to our State Agricultural Society, as I did those of 1843, on the same land. They were published, and some of you may have seen them; I will, therefore, only repeat the tabular statement of those years, and add to it that of the past year. In 1844, these lands rested. The experiment marked No. 1 was made on mulatto land lying on the river bluff, which in appearance, and perhaps in most other respects, is much the same as the best upland cotton soils in your County which have been as long in cultivation. Experiment No. 2 was on light, sandy soil; the sand is very fine, but, altogether, the soil is inferior as any, probably, that you plant in cotton. I could scarcely have selected lands less calcu-

lated to give the marl a fair chance, both having been cleared more than a century ago, badly scourged, and of course greatly exhausted of vegetable matter.

EXPERIMENT NO. 1. MULATTO LAND.

1842.	Seed Cotton.	Less than unmarled acre.	More than unmarled acre.	Per ct.
Acre not marled	1111 lbs.			
Do. marled 100 bushels	846 "	265 lbs.		30·
Do. do. 200 "	1003 "	108 "		10·7
Do. do. 300 "	1318 "		207 lbs.	17·7
1843.				
Acre not marled	493 lbs.			
Do. marled 100 bushels	654 "		161 lbs.	32·6
Do. do. 200 "	759 "		266 "	53·9
Do. do. 300 "	841 "		348 "	70·
1844—Rested.				
1845.				
Acre not marled	324 lbs.			
Do. marled 100 bushels	481 "		157 lbs.	48·4
Do. do. 200 "	584 "		260 "	80·2
Do. do. 300 "	642 "		318 "	98·

EXPERIMENT NO. 2. SANDY LAND.

1842.	Corn.	Less than unmarled acre.	More than unmarled acre.	Per ct.
Acre not marled	17 bushels.			
Do. marled 100 bushels	21 "		4 bush.	23·5
Do. do. 200 "	21 "		4 "	23·5
Do. do. 300 "	18½ "		1½ "	8·8
1843.	*Seed Cotton.*			
Acre not marled	361 lbs.			
Do. marled 100 bushels	451 "		90 lbs.	24·9
Do. do. 200 "	384 "		23 "	6·3
Do. do. 300 "	173 "	188		108·6
1844—Rested.				
1845.				
Acre not marled	230 lbs.			
Do. marled 100 bushels	317 "		88 lbs.	37·7
Do. do. 200 "	301 "		71 "	30·8
Do. do. 300 "	159 "	71		44·6

The first thing that will strike you on looking at this table will be, that the crops have regularly and excessively diminished, from the time the land was marled. It might be concluded that I had ruined my land by marling. Such I would candidly own would have been my own conclusion, if fortunately I had not kept these unmarled acres to test the success of my operations. Disastrous as have been the three last crop seasons in this section of country, I would not have believed it possible that there could have been such a falling off from seasons alone, and I should have abandoned marl, in spite of the experience of the rest of the world, as injurious, at least to my soil. But great as has been the decrease of production on all the acres, it has been far greatest on the unmarled ones. That of the others has comparatively steadily increased, except the 200 and 300 bushel acres in No. 2, both too heavily marled, but both recovering again under the rest of 1844. In No. 1 the acre with 100 bushels has increased from 30 per cent. below to 48·4 per cent. above the unmarled one, making an actual comparative increase of 78·4 per cent. The acre with 200 bushels has in the same way increased 90·9 per cent. Both these acres are decidedly inferior to the other two in No. 1, and have, I do not doubt, produced this year double what they would have done without marl. The other two acres in No. 1 are a pretty fair test of the influence of marl, being as nearly equal in quality as could have been selected. The sandy land, in time and with proper management, will, I am certain, exhibit results fully as favorable as the mulatto land. It was too far exhausted when marled. I did not reserve test acres on any other fields, but I feel sure that they have derived equal advantage from the marl, in proof of which I could state many facts to one present on the spot, which it would be tedious to mention and explain fully in this letter. I will only state one: The unmarled acre in No. 1 is one of the best acres I plant. In 1842, it yielded 1,111 lbs. The average of my whole crop that year was 666 lbs. per acre. The last year, the same acre, *after a rest*, produced 324 lbs. The average of my crop was 391 lbs. per acre. Thus, the yield of the unmarled acre was in one instance 66·8 per cent. above, and in the other, 20·6 per cent. below the general average—making a difference of 87·4 per cent. in favor of the marled lands. Let me add, that in 1842 the unmarled acre in No. 2 produced 8·8 per cent. less than the average of the crop. In 1843 it fell to 37·6 per cent. and in 1845 to 70 per cent. below the general average. If these facts may be assumed as data on which to base a calculation, had the last year been as favorable in all respects as 1842, the average of my cotton crop must have been over 1200 lbs. of seed cotton per acre, and of my corn crop over 28 bushels per acre. This, however, is only a *paper* calculation, and 1842 was a fine crop year. Time will reveal the truth.

I cannot give you a better evidence of the firmness of my faith in the virtue of marl, than to state that, notwithstanding the discouragements of the last three extraordinary seasons, I have, at great expense, brought up from Shell Bluff, within four years, over 300,000 bushels, carted it out, and spread it over about 2,300 acres of land; and am at this moment as actively engaged at it as ever. Nor do I look forward to

a period when I expect to cease using it to a considerable extent every year, either on fresh lands, or in increasing the dose on those already marled. It would be leading you into error, however, to leave you to suppose that I rely solely on the marl to improve my lands. Rest, in connection with it, is indispensable, and manure becomes far more beneficial. I have, accordingly, by opening more land, and reducing my planting, enabled myself to rest annually one-third of my fields. And I have already hauled out and mixed together, for the coming crop, 96,000 bushels of muck, and 48,000 bushels of manure from stables and stable-yards, hog and ox-pens, &c., having yet about 20,000 bushels more to carry out before planting. I shall not only endeavor to increase this amount of manure every year hereafter, but also, by clearing and reducing the land in cultivation, to rest, as nearly as may be requisite, each field every other year. Indeed, the management of land after it is marled is of the utmost consequence to the efficiency and profit of marl. Though lime is itself a portion of the food of plants, and therefore a manure, this is perhaps the very least of its virtues. Its indirect operations are far more important. It is the grand agent that prepares for the crop nearly all the food which the earth furnishes. It is the purveyor-general—no, the farmer must fill that office: it is the "*chef de cuisine*" that selects the ingredients, mixes and seasons almost every dish to suit the delicate appetite of the growing plant. It is from the materials placed in the soil by Nature, or the industrious husbandman, that this skillful artist draws the rich repasts it furnishes; and it could no more furnish them without these materials, than your cook could make your soup without joints and spices. The larder of the marl must, then, be amply supplied. The means of doing it are rest and manure. The great gain to the farmer is, that having once engaged in his service this powerful, untiring, and almost universal agent, he may safely exert himself to the utmost of his ability to supply it with everything necessary to carry on its important operations. Seizing on whatever is valuable, it preserves it from waste—combining with the utmost generosity the wisest economy, it not only yields to the plant all it requires, but stimulates it to ask more, while it is inaccessible to demands from all other quarters.

There is no fancy in this—Theory and Experiment unite to prove it true. And I trust that no great length of time will elapse before marl shall have written its own eulogy in indelible characters over all the broad fields of your County.

Permit me to conclude this letter, for the great length of which I owe you an apology, by returning my acknowledgments for the honor you have done me in electing me an honorary member of your Society, and by wishing each member of it the utmost success in his Agricultural pursuits.

I am, very respectfully,
Your ob't serv't.
J. H. HAMMOND.

HAMILTON RAIFORD, Esq.
Corresponding Secretary of the Agricultural Society of Jefferson Co., Georgia.

NOTES ON THE MANAGEMENT OF SHEEP:

FOUNDED UPON REPORTS OF COMPETITORS WHO GAINED PREMIUMS AT THE WOOL COMPETITION HELD AT EDINBURGH IN 1845.

CHEVIOT SHEEP.—*Mr. Anderson, Sandhope, Selkirk.*—The flock consists of about 1,000 ewes of ages varying from one to six years, and it was reared exclusively on coarse hill pasture, elevated from 1,000 to 2,000 feet above the level of the sea. The stock ewes get no artificial food, except on the occasion of a severe storm, when they are supplied with a little natural hay. To afford such aid, unless urgently required, would tend to lessen the exertion of the sheep to provide for themselves. The tups are bred from selected ewes by the best rams, and put on grass and turnips during winter and spring. The washing takes place about the end of June in a pond, into which the sheep are made to leap from a platform raised about two feet above the surface of the water, and then caused to swim twice or oftener across, as may be necessary for cleansing them. The clipping is performed about eight days after. The animals are laid on a stool, the operator proceeding lengthways in parallel lines an inch in breadth, and making the cuts as low and smooth as possible. The price obtained for the clip of Cheviot wool in 1845 was 28s. 6d. per stone of 24 lbs.; and for the black-faced clip, 13s. per stone. Wethers are not kept; but barren ewes, sold from the hill pasture at the end of autumn, weigh about 13 lbs. per quarter. The average weight of a Cheviot fleece is 3 lbs. 7 oz.; and of a black-faced, 4 lbs.

The black-faced flock, containing 600 breeding ewes, is similarly managed.

Mr. Gentle, Dell, Inverness.—The flock, in which there are 500 shearing ewes, is washed about the 18th of June. The sheep are driven three times through an arm of a fresh-water lake, having to leap into the water from a breastwork four feet high, and to swim from thirty to forty yards. The clipping follows about the 22d of the same month. It is done longitudinally, with an even and rather bare cut. The clipper is seated on a smearing-stool, which is covered with a tough sod, to prevent the animals being hurt. The pasturage consists of common mountain grasses, much intermixed with heather, and its altitude varies from 1,000 to 2,000 feet above the sea. In winter and spring, however, the sheep, when the inclemency of the weather makes it necessary, are brought to lower ground, at an elevation not exceeding 100 feet. The clips of 1844 and 1845 were sold at 18s. per stone of 24 lbs. Three-year-old ewes have been sold for £25 10s. per score—a price considered less

than their value. Such sheep, getting good turnip feeding till the end of March, would weigh, on an average, from 18 to 20 lbs. per quarter; but individual sheep have weighed 25 lbs. per quarter. The fleeces of the shearling ewes will be about 4 lbs. weight each on an average; but, taking fleeces of all classes, the average per fleece will be about 5 lbs. The fleeces are understood to consist of laid wool.

Mr. Tweedie, Deuchrie, Prestonkirk.—The flock contains from 300 to 400 shearlings. The sheep are washed in June by making them leap three or four times into a pool, and swim fifteen or twenty yards. They are generally clipped within a week after, the shears being used longitudinally. The pasturage is on the Lammermuirs, poor and mostly heath. In winter and spring, turnips and hill pasture are the means of support, each being afforded daily. The clip of hogg and ewe wool in 1845 sold at 29s. 6d. per stone of 24 lbs. For the last five years, a bath mixture, prepared by Brown of Haddington, has been used in autumn; and, while it has kept the stock quite clean, it is easily applied. Three men to dip, and a boy to drive water, can easily bathe 600 or 800 sheep in a day. The apparatus is not very expensive, and it promotes the comfort both of men and sheep. It consists of a tub for dipping, and a large trough in which the sheep, after being dipped, stand to drip—and so constructed that the drippings run back into the tub. Since the adoption of this plan, the wool has always been considered very fine, and, indeed, the best shown at a local exhibition.

Black-Faced Sheep.—*Mr. Vere Irving, Newtown House, Moffat.*—In the district of Moffat it is not customary to wash black-faced sheep. The shearling and barren ewes, and the rams, were, in 1845, clipped on the 2d July, and the rest of the flock, consisting of ewes rearing lambs, on the 19th of the same month. In 1844, the clipping of the latter class of stock took place some days earlier; but this is not considered advisable, as the wool last season was better risen than in the preceding year. In clipping black-faced sheep, the shears are run from head to tail; but, in the case of Cheviot sheep, they are directed over the shoulder and back. The latter method produces a neater clip, but the former is more expeditious. The farm rises from a base of 910 feet above the level of the sea, to an altitude of 1,550 feet above it. The lower portion, which is divided into parks, and is well sheltered, is occupied with dairy-stock, grain, green-crop and hay; and, for the greater part of the year, the sheep are entirely confined to the upper division, or steep ground. The pasture is short and of a bright color, intermixed with coarse bent, which requires to be burnt in spring. Some years ago, part of the bent ground was plowed, heavily limed, and sown with grass seed; and thus a great improvement was effected, the bent having been replaced by a bright green pasturage, which cannot be distinguished from those portions of the ground that are not naturally covered with bent. In winter and spring, the sheep, if their condition seems to demand it, are admitted into such of the lower parks as have been cut for hay, or pastured during the summer by the dairy stock, which is then fed in the house. The sheep are let down from the higher ground in the morning, but are invariably put out of the parks between one and two o'clock in the afternoon. In the event of a severe snow-storm, they are fed with meadow hay, which is carried out to them. In weaning the ewe lambs intended for stock, they are put into one of the parks for a week, and then allowed to return to their mothers, whom they recognize, but no longer attempt to suck. An advantage of this plan is that the lambs follow their dams through the winter, and, if there is snow, they are helped by them to scrape, so that they do not so often need to be fed with hay as when they are kept separate all the winter. The last clip sold fetched 12s. per stone of 24 lbs. for fleeces of all denominations.

Cross between Cheviot and Leicester Sheep.—*Mr. Brown, Halls, Dunbar.*—In the flock there are about 600 hoggs. The usual period for washing is about the end of May or beginning of June; and the plan followed is that of placing four or five men in a stream of clear water up to their middle, one above the other, and passing the sheep, one by one, from the lowest to the highest—each man, in turn, plunging the animal in the water. The shearing follows in three or four days, when the natural oiliness of the wool, extracted by the washing, is restored. The operation is performed in an open shed, laid with green sods. One or two women attend for the purpose of freeing the fleeces from particles of clotted wool, and afterward winding them. The price obtained for the clip last sold was 31s. per stone of 24 lbs.—The pasture on which the Cheviot ewes are grazed, from which the half-bred lambs are reared, is situated on the northern boundary of the Lammermuirs. The lambs are weaned about the middle of August, when they are removed to the sown pastures on the farm. In November they are bathed with a mixture of tobacco liquor and spirit of tar, in the proportion of half a Scotch pint of the former to a wineglassful of the latter for each sheep. They have then a few turnips laid on their pasture, and, when they have fully acquired a taste for them, they are folded on turnips alone during winter and spring, or until grass is ready for them—which, on the high situation to which they are transferred, is, in ordinary seasons, about the middle of April or beginning of May.

HOME AND FRIENDS.

BY CHARLES SWAIN.

Oh! there 's a *power* to make each hour
As sweet as Heaven designed it;
Nor need we roam to bring it home,
Though few there be that find it!
We seek too high for things close by,
And lose what Nature found us;
For life hath here no charm so dear
As home and friends around us!

We oft destroy the present joy
For future hopes—and praise them,
While flowers as sweet bloom at our feet,
If we 'd but stoop to raise them!
For things *afar* still sweetest are
When Youth's bright spell hath bound us;
But soon we 're taught the earth hath naught
Like home and friends around us!

The friends that speed in time of need,
When Hope's last reed is shaken,
To show us still that, come what will,
We are not quite forsaken:
Though all were night, if but the light
From *Friendship's* altar crowned us,
'T would prove the bliss of earth was this—
Our home and friends around us!

HOUSEWIFE'S DEPARTMENT.

The more any man of any discernment sees of the world, and reflects on the relations subsisting between and the offices performed by the various members that constitute one family, (and with families make up society); the more deeply will he be impressed with the dignity and importance of the duties which social arrangements assign to the *mistress of every well regulated household*; and the high honor and esteem to which she is entitled when these duties are well executed.

Let but her part be neglected, or carelessly or ill performed, and chaos soon takes the place of order, neatness and economy take their departure, and domestic misery and ruin are too sure to enter, close on the heels of pride and indolence. There is nothing more beautiful, nothing to which a sensible man more readily pays the homage of his admiration and respect, on his entrance in the domestic circle of the old Southern States, than the cheerfulness and alacrity with which he still sees the ladies there, both mother and daughters, of the most opulent, and best bred families, play out in full measure, their appropriate parts in the management of domestic affairs, and when occasion demands, even of the out-door concerns. To be familiar with all the duties of housewifery, seems to form, in fact, as we have lately witnessed with high gratification, a part of the education of young ladies of the amplest fortune, the most refined manners and the highest intellectual cultivation. And where, it may well be asked, can beauty and intelligence be seen to more advantage, than in the exercise of duties which do and ought to constitute a great portion of the employment, sometimes of daughters on whom the loss of a mother may devolve the care of a household, and especially of every married woman who would see her husband prosperous, respected and happy? All who are at all familiar with the history of rural life in the old "plantation States," must know of instances of remarkable women, who, with an energy of character almost beyond their sex, have grappled with adversity brought on by the indolence, extravagance, or misfortune of their husbands: and while clearing their estates of the most frightful embarrassments, have contrived to educate their families, and finally to leave them in the enjoyment of their wonted respectability and independence. Forever honored be the memories of such noble women! Too much gratified should we be to preserve in the Housewife Department of the FARMERS' LIBRARY the fullest memorials of such as thus do honor to their sex and their country; and may we not appeal to the gallantry and justice of readers who can appreciate our views, to aid us in preserving suitable memorials of those whose lives afford to society, examples so useful?

While military heroes of all degrees, and not a few of doubtful merit, swing in their gorgeous trappings on every tavern sign; while partisans, floating for the moment on the top of the tide, emblazon the front of political reviews, and while our popular and fashionable magazines glare with costly pictures of noble dames in courtly attire, or with the meretricious representations of fashionable *artistes*, dancing half naked in "mid air;" all well calculated to beget ideas and inclinations the most vitiating and effeminate; where do we find the portrait or biographical sketch of the noble matron, in the midst of her homely avocations, laying "her hands on the spindle or the distaff," counting her poultry, inspecting her dairy, or teaching her children? and yet, to saying nothing of the present, how many illustrations might be drawn from old family annals, of women of the finest character who without seeking it, won distinction by thus looking after the "ways of their household."

Not on their own accounts should the memories of such women be honored, for they are gone beyond the reach of praise—who cannot call to mind some who have been called away in the midst of their usefulness and at the very moment when they were most dear and most necessary to those who remain to deplore their loss?

"Why is it thus that fairest things,
The soonest fleet and die?
That when most light is on their wings
They're then but spread to fly?

And, sadder still, the pain will stay
The bliss no more appears;
As rainbows take their light away,
And leave us but their tears."

No! no! It were for no such vain purpose that we would commemorate the virtues of such women! but to give assurance to our daughters, to those who are to be the future mothers of the Republic; that for them as well as for our sons, honor shall be the reward of excellence, and *their* virtues too be gratefully recorded.

That posthumous honors should be reserved for our sex alone, or living ones be lavished exclusively on women of high rank, or on those who can make the most impressive public display of courtly and fashionable costume, or mere physi-

cal powers and development, is as unjust in itself, as it is inexpedient and pernicious as regards the welfare of American society. In that Department of the FARMERS' LIBRARY then, which is set apart for Housewives and their concerns, there shall at least be one place reserved for registering the merits and virtues of such as in the performance of their housewifely duties, may have most eminently deserved to have it said of them:

"Many daughters have done virtuously, but thou excellest them all."

Who will suggest a subject and aid us in the performances of this promise? We pause for a reply.

A SUCCESSFUL METHOD OF RAISING DUCKS.

From the Southern Agriculturist.

CHARLESTON, February, 1833.

BELIEVING it to be the duty of every individual to contribute for the benefit of society, any information he may possess, however small, and on subjects ever so humble; and having for several years past been in the habit of seeking recreation during those hours which were not devoted to severer studies and labors, in a variety of experiments on subjects of Natural History, I propose giving you the result of some experiments in raising ducks, which were carried on during a number of years, and which finally eventuated in complete success.

It is sometimes beneficial to examine the causes of our failures, and it affords me pleasure at this moment in retracing the steps by which, after many disappointments, I gradually accomplished the objects to which my inquiries and experiments were directed. As an account of the process by which I arrived at these successful results may not be uninteresting to those of your readers who devote themselves to rural pursuits, and who pride themselves on having a well-stocked poultry-yard, I hope it may be no tax upon their time and patience, if I go somewhat into detail.

During many years I was struck with the general want of success which attended the raising of this species of poultry. Not one-sixth of the young were ever raised—they appeared to be subject to innumerable diseases. Those that escaped were stunted in their growth, and did not arrive at full size till they were many months old. The general complaint among farmers and planters was, that this, the most valuable of our poultry, was a puny bird, hard to raise, and subject to many diseases. They could raise fowls and even turkeys, but there was no certainty with regard to the duck.

Desirous of investigating the causes of a failure in raising a bird which in its wild state is very hardy—which, although exposed to all the vicissitudes of the weather, raises large broods of young, I procured several ducks, determined to pursue my experiments in various ways till I should either be successful or be satisfied that in a state of domestication, there existed obstacles to their successful rearing which no foresight or care could prevent.

At first I adopted the usual mode of giving them access to as great a body of water as I could provide for them in the yard. I therefore had an artificial pond made near their coops, to which they could resort as often as they chose; here they amused themselves at all hours of the day, in dabbling around the edges of the pool, and in swimming and diving in the water; but they did not grow—they were subject to cramps and fits, and one after another died, till I began to think that water was not their proper element. I varied their food—gave them rice-flour, corn-grist, boiled potatoes, hominy, bran, and many kinds of vegetable food, but with the same results—and of a hundred young that were hatched, I scarcely raised a dozen. I then began to mix with their food various medicinal herbs, believing that this might correct some deleterious properties of their food, but it was to no avail. I next procured the different varieties of ducks for breed, thinking that perhaps one kind might be better suited to the climate and the confinements of the poultry-yard than another; but I was soon convinced that my want of success was not owing to my breed of ducks. Several years passed away and left me pretty much where I began, and I was almost ready to abandon any farther attempts at raising the duck.

The thought at last occurred to me that in the food with which we usually fed this species of poultry, we departed widely from nature, and that, although the old ducks in their wild state fed on rice and the seeds of various grasses that are found along the edges of the rivers, brooks and ponds, yet, that at the spring of the year, when the young wild-ducks are hatched, there are few seeds ripe, and it is questionable whether at that early age they feed at all upon grain or seeds. There appears in the digestive organs of these young birds something unsuited to this kind of food—it passes through them without affording much nourishment. I had ascertained by dissection that their gizzards were filled not with vegetable food, but with the fragments of small craw-fish, worms, and various aquatic insects, as well as the spawn of fishes, and I determined in the following year to try the effects of animal food. In due time my young ducks were hatched, beef was given them at first, after having been chopped very fine; this they devoured greedily, and eat it preference to all kinds of vegetable food. The effects upon their health and growth was immediate and surprising! They appeared to grow faster than any other poultry—in a few weeks they were out of danger, and in a few months fit for the table. As beef was expensive, I tried cheaper kinds of food, such as the haslet of animals, crabs, fishes, &c. The result was equally favorable. I was now satisfied that in the article of food the end is attained by simply following nature, and giving the young ducks animal food.

But although my experiment was thus far favorable, I found that many of my young ducks died after having been suffered to go in the dews and water, and that after many showers of rain they became thoroughly wet, and that when showers were succeeded by hot suns, they were subject to a disease of some apoplectic character, or a *coup de soleil* which killed numbers.—Here I was much puzzled. I had succeeded in one instance by following Nature, but I found that I could not carry my theory through, and that water affected the domesticated duck very differently from what it did the same bird in its wild state. The fact was not unknown to me that the down of young wild-ducks is almost impervious to water; they are exposed to dews

and rains—they dive to the bottom of pools and streams, and live in the water: yet they always keep dry—an oleagenous substance is spread over their feathers, from which the water glides off instantaneously and leaves the bird dry during all weathers. Not so with the young of the domesticated duck. Owing, either to the confinement of numbers in a small space, where their down becomes ruffled and displaced, or to their not being able to procure that kind of food which in the wild state is favorable to the secretion of that peculiar oil which is found contained in the glands of birds, and which serves to lubricate their feathers and protect them from the wet, the down of the young tame duck soon becomes thoroughly wet, and when this is once the case, it is subject to various diseases and is difficult to raise. To accommodate the young duck to that artificial state into which it had been thrown by domestication, I found it necessary to adopt some mode by which during the first few weeks of its life, (the only time in which it requires much care), it might be preserved from the effects of that element, which in its native state is almost its only residence, and furnishes the means of its subsistence. A little reflection enabled me to guard against the inconvenience and dangers which result from this state of domestication. I had my coops built pretty large and tightly shingled, so as to be impervious to water. The young ducks were not let out in the morning dews till the sun had dried the grass, and the vessels in which their water was placed were railed over, so that they could drink by inserting their bills between these little railings, but were prevented from getting into the water. After following these simple directions with regard to food and shelter, I found that by a little attention of a servant, I could supply my table with ducks the whole year round—that I seldom lost one in twenty, and they were free from all diseases. I raised from one hundred to three hundred ducks per year, and now found that they were the easiest of all poultry to raise. I communicated the result of my experiment to my friends. Those of them who had the disposition, the patience and industry, followed my directions, and in every instance met with the same success. I have their assurance, that they can now raise ducks in any numbers, and some of them have for the last two or three years supplied our markets with from three to five hundred ducks of the largest size and finest flavor.

After having carried my readers through this perhaps to them tedious detail of experiments which cost me much time and attention, but for which I was more than repaid by the successful result, I shall now proceed to give, under different heads, such simple directions as will enable our planters and farmers to supply their tables with this kind of poultry, which might be an object to those who are in the habit of supplying our markets.

1. *The species and varieties of ducks best adapted to the purpose of breeding.*—The only two species of ducks that are raised in this country are what are commonly called the English duck and the Muscovy duck. The English duck is a descendant of the wild duck that visits us every winter in such numbers, called the mallard *(Anas boschas)* is found also in Europe, and breeds in England, although not the largest, it is certainly among the finest flavored ducks in the world. The flavor of the famous canvass-back duck *(Anas Vallisneria)* that is found so numerously in the Chesapeake, and more recently in the Santee, and at the mouth of the Savannah river, is no doubt superior to it, but it is supposed that this is owing to the peculiar kind of root on which that feeds, believed to be the *Vallisneria Americana*—and that were it fed on common food its flavor would not be superior.

The English duck, which is so common in our yards, has from its long domestication, run into a number of varieties, which differ so much from each other as to appear like different species; they are of different sizes—of a variety of colors, and some are tufted. The variety to which I have usually given the preference, goes by the common name of the Madagascar duck, is distinguished by its being of the largest size—having a pretty long neck and almost invariably a light streak above the eyes, and usually a small streak extending from the lower part of the upper mandible to below the eye.

The Muscovy duck *(Anas Moschata)* is another duck more recently introduced, but which is now very common, and is well deserving a place in our poultry-yards. It was formerly, by most writers, considered as coming from the Eastern Continent, but is now well ascertained to be a native of South America. This duck, in our Southern climate is, perhaps, more hardy than the other—sets more steady on its eggs, and lays in the spring and fall. A mongrel breed between this species and the English duck is easily produced, and has become very common; but these, though they are good layers, are unable to propagate their species.

There are other species of ducks, which the curious in these matters have partially succeeded in domesticating. I once saw a fine flock of the Gadwall ducks, *(Anas strepera)*, which an individual, in the upper part of the State of New-York, had succeeded in raising from ducks which he had captured, and which bred freely in his yard, and made no attempts at flying away. Our beautiful Summer duck *(Anas sponsa)* breeds freely in some parts of France and in the Zoological Garden in England. But it is very probable that the two species mentioned are as well adapted to our purposes as any other, and that, for many years they will be the only ones which will be generally kept in our poultry-yards. One drake will answer for five or six ducks. Where mongrels are to be bred, place in a separate yard, one Muscovy drake to four English ducks.

2. *The best mode of procuring an abundance of Eggs.*—When ducks are raised in the country and have access to rice-fields, ditches, ponds, and the borders of rivers, they find food best suited to them and generally lay early and freely. But where they are necessarily kept in yards, and do not possess the above advantages, it will be necessary to adapt their food to their situation. A mixture of any kind of animal food with their rice-flour, corn-meal or grist, given them regularly and plentifully three times a day, will enable you to procure a great abundance of eggs; where this is neglected, your English ducks will lay but sparingly. I have observed that animal food is not so necessary to the Muscovy duck, but that they will lay pretty freely on being fed on grain alone.

3. *Setting and hatching the Eggs.*—The English duck, although a good layer, is very careless about hatching its eggs until late in the season. I have invariably used the common hen for that purpose; and when the young ducks are removed as soon as they are dry, their foster

parent will set again on other eggs; and I have thus known a single fowl to bring out three, and even four broods of young ducks in succession. In that case, she should be repaid for her faithfulness by being richly fed. The young ducklings, in this climate, leave the shell on the twenty-sixth day. The Muscovy set a few days longer. A fowl of a tolerable size will cover from thirteen to fifteen eggs. After the eggs have been four or five days under the hen, you may, in the evening, examine the eggs by the light of a candle or lamp. Place the eggs longitudinally between the fore finger and thumb. If the egg be likely to hatch, it will be of a dark color, with streaks of red frequently perceptible; and the cavity on the thick end will be somewhat enlarged and transparent. If it be a clear egg, it will be wholly transparent, and ought to be removed at once; and if it have not been kept too long in the nest, it is still fit for use. In this way, when several hens have been set nearly at the same time, it will frequently be practicable to remove a sufficient number of clear eggs, so as to place a fresh setting of eggs, under one or more of them. The Muscovy duck sets faithfully, and may as well be permitted to hatch her own young.

4. *Method of destroying fowl-lice.*—The insects which infest the setting hens may be easily destroyed by thoroughly sprinkling the nest, and wetting the fowl, even to the skin, with a strong decoction, made by pouring hot water on a handful of common leaf tobacco, mixed when cold with a table spoonful of spirits of turpentine, and double the quantity of gunpowder. It will be well, also, occasionally to take away their old nest and make a new one of fresh hay or straw.

5. *Duck-coops, food, and manner of rearing the young.*—Let your coop be made pretty large; say three or four feet in length and three in depth. Let it be well shingled, so as to exclude all water, and have a good pitch toward the front. Let it be tight on three sides and barred in front, with a slide below the lower bar, so as to retain the ducks in unfavorable weather. A space of ten or twelve feet square, formed of common boards set up edgewise, will, when you have not much room in your yard, suffice for fifty ducks. Keep making coops in proportion as your ducks increase in nnmbers, and endeavor to keep the different sizes separated. The first brood, early in the spring, requires for a few days, the warmth of the hen's body; and she should not be made to take care of more than twenty or thirty. A little later in the season, the young that are then hatched do not require the services of their foster-mother, and may from the beginning be placed in a coop by themselves, to the number of fifty. Young Muscovy ducks may be treated in the same way; and they and the mongrels and English ducks, may all be indiscriminately reared together.

As soon as your young ducks are hatched, let them be placed together, for a few hours, in a basket containing some warm inside lining; and when they have sufficient strength, place them with the hen in the coop. Feed them with meat, or animal food of any kind, chopped fine with a chopping-knife. For convenience, I have usually had it boiled. A little rice-flour or cornmeal may be mixed with it, and the latter may be increased, if you have but little meat. Let this be continued for three weeks, and they are out of danger and can be raised on any kind of food. Still it is to be observed that ducks in all cases thrive better on animal food, and where this can be conveniently obtained, it may as well be given them. Those planters who live near our sea-coast, by running a tight board fence across any small branch of salt water, and placing in the centre a fish-trap made of laths, can easily procure a sufficient quantity of fishes and crabs to feed all their young poultry. A man with a cast-net could in half an hour do the same. I have known persons in the interior of the country, substitute squirrels, rabbits, and even venison; and one gentleman fed his young ducks on he flesh of alligators, thus rendering that which was a nuisance, subservient to his profit. When your young ducks begin to be tolerably feathered on the sides, which will be in five or six weeks, they may then be turned into the common poultry-yard—always bearing in mind, that those which are best fed, and obtain most animal food, thrive the fastest.

I have not treated of diseases to which ducks are subject: since, by the above treatment, I have generally found them healthy.

As this is a long essay, and may be too great a tax on your readers to peruse, I would give in a single line, the substance of my directions for the successful rearing of young ducks:

Give them animal food and keep them dry.

EXPERIMENTER.

☞ For a long time, and in many forms that may not be readily traced to the time, the place, and the occasion, our readers will get the benefit, much or little, of our (to us) most gratifying tour among the hospitable sons and no less hospitable daughters of the South.

At Mobile, for example, as early as the 8th and 9th of April, at the table of C. M., Esq., one of the true old Virginia game breed, we feasted abundantly on *strawberries and peas!* Yet, after a lapse of forty-three days—this being the 21st of May—they have not been placed on the tables of the Hotels in New-York. This is mentioned to show the wonderful difference of climate in our vastly extensive and *extending* Country; but this is not what we would be at. At the same hospitable table we partook of a most excellent kind of *soup*, new to us, called "FRENCH GUMBO." The lady of the house (and what house or table was ever worth mentioning that had not a lady to govern and preside over it), gave us the following:

RECEIPT FOR FRENCH GUMBO.—Cut up one large fowl, season it with salt and pepper, drudge it well with flour; have ready a soup-kettle, put in a table spoonful of butter, one of lard, a handful of chopped onion; fry the fowl then to a good brown, add to this four quarts of *boiling* water, cover close, let it simmer two or three hours, then put in fifty oysters with their liquor, a little thyme and parsley: just before serving, stir in a table-spoonful of the *filee powder*; season high with cayenne pepper.

N. B. Cold turkey and beef-steak make also very good Gumbo.

The Filee or Felee (or however else it may be

spelled) is what gives a *mucilaginous* character and excellence to this soup. The powder consists of nothing more than the leaves of the sassafras *cured in the shade*, and then pounded and sifted; therefore, any family in the country can always have it in the house. It is on sale in the shops in the South. Thus, any one who will *take the pains* may, any day in the year have a tureen of most palatable and very nutritious soup, out of very ordinary materials.

☞ Some men pretend to despise these "small matters," but put them within reach of them and see how their *actions square with their pretensions!*

DESULTORY NOTES ON A VARIETY OF SUBJECTS.

THERE is in Edinburgh, connected with the Highland Agricultural Society, an "*Agricultural Chemical* Association," conducted by Professor Johnston.

The laboratory of this Association contains *seven apartments*, in which analytical operations are continually carried on.

It may serve to impress on the minds of those who think it a mere trifle to analyze any substance, and expect chemists to do it for no consideration, to state that, in this extensive laboratory, to analyze carefully three different oil-cakes, so that the Professor might feel perfectly confident of the result, it took him and two of his assistants *three months*. He has five assistants constantly employed. Some of the practical benefits to the farmer arising from the analysis of this single substance, oil-cake, are indicated by the propositions which will be found on another page.

Members of Congress may form some idea of what would have to be done in the Chemical Laboratories of a great National Institution, when they are told that, at this Agricultural Chemical Association, deriving no assistance from Government, there were 372 analyses made in the year. The subjects were: Guano and other manures; soils—stiff and fine clays; limestones and marls; iron and manganese ores; waters, turnips, oil-cakes, refuse manufactures, potatoes; determination of nitrogen air, oats, barley, oil-cake, slates, and other rocks, ashes of oats, potatoes, (tubers and tops), wheat, barley, and oil-cakes. It is a curious fact that the Committee of this Agricultural Chemical Association in urging the propriety of a salary of a little more than $2,000 to Professor Johnston, refer to the "*risks incurred by him as a chemist of the Association.*" Among these risks, say they, "exposure to actions of damages, for advice given to members, should not be lost sight of. During the last six months, an action was raised against him for an opinion given at one of the monthly meetings, as to the value and use of an English artificial manure, the effect of which was alleged to be a depreciation of the price of the compound, and for which damages to the extent of fifty thousand dollars were claimed. Professor Johnston offered to make for the patentees, in order to verify his opinion, a minute analysis of the substance, provided they would agree to publish the same. *Since that offer he has heard no more of the action.*

Here, again, Members of Congress may have an inkling of what the Smithsonian Institute could do for Agriculture, if the prominent feature of its organization *looked that way!* Not only might farmers get every substance and earth analyzed, but here they would have the means of clipping the wings of various humbugs that are let loose, in succession, one year after another, to amuse or fleece the agricultural or horticultural communities. But we should remember they are not agiculturists or horticulturists that most efficiently electioneer in the pot-houses!

Suppose half as much to be taken out of the Treasury for the diffusion of agricultural knowledge, and the construction of agricultural highways, as is done annually for the warlike machinery of the *Republic!* Why, for *military surveys* alone it is proposed to pay more than $100,000 next year!

In illustration of the advantages derived from the Scotch Association, one practical farmer specifies a case in which Professor Johnston, on application, showed him how he could himself make a certain manure, which he was about to buy, at a cost so much less than it was sold for, as to save him $100 on the quantity he should have purchased at that time. The same Lothian farmer says: "I have no doubt the day is not far distant when an intelligent agriculturist will, on entering a farm, obtain correct analyses of his soils and subsoils of the manures he uses, and of the crops he rears. In this way he will be able to keep such a Dr. and Cr. account, between his soils and manures on the one hand, and his produce on the other, as will enable him to know what substances to apply so as, with the assistance of the mechanical improvements of the soil, to produce an amount of animals and vegetables, from a certain breadth of land, which even the most sanguine hardly dares to hope for!" And he might have added that it would be in the power of the farmer, by these means, to calculate, with a good deal of accuracy, how much his land is gaining or losing in fertility

from year to year. Who doubts that this might have been done before now, if public men could be brought to legislate for the general, instead of for particular interests?

ABSTRACT FROM THE RETURNS OF AGRICULTURAL SOCIETIES OF MASSACHUSETTS.—We are indebted to Mr. DODGE, of Hamilton, for this interesting compilation. In our next Number we shall publish Mr. Phinney's "Description of the stock recently imported by the Massachusetts Society for Promoting Agriculture: accompanied, perhaps, with some notes of the Editor of the FARMERS' LIBRARY.

We are not surprised to find such a man as Mr. P. concurring, apparently, in what we have suggested as the worthlessness of many of the stereotype premiums offered by Agricultural Societies, and their utter inefficiency in diffusing old or producing *new knowledge*—or in effecting any general or permanent improvement in the branch of industry to which those premiums are applied.

Without intending here to anticipate what we may have to say on this Report of Mr. P., we take room to extract his remark on the effect of annual premiums for *best milch cows*:

"Thousands of dollars have been offered and awarded in premiums for the best milch cows within the Commonwealth, during the last *twenty years*; and, as appeared to the Trustees, to *very little benefit*. Whoever has attended our cattle-shows may have occasionally met with a cow, remarkable for her milking properties, which the fortunate owner purchased from some drove. This accidental cow is exhibited at the cattle show; well authenticated proofs of her great yield of milk or butter are produced; the owner takes the highest prize, and puts the money in his pocket; the calf is sold to the butcher, and the cow the next year is put into the beef barrel. And this has been the beginning and the end of most of the native cows to which the highest premiums have been awarded."

"The breeds of cattle," says Mr. P., "which the Trustees believed, under all the circumstances, to be best adapted to this country, best calculated to promote the object they had in view, and to *subserve* the objects and wants of the farmer, were the Ayrshire and the North Devon." His reasons will appear in our next.

PRICES CURRENT.

[Corrected, May 23, for the Monthly Journal of Agriculture.]

ASHES—Pots, 1st sort	℔ 100 lb.	3	75	@	—	—
Pearls, 1st sort, '45		4	06½	@	—	—
BEESWAX—American Yellow		—	29	@	—	29½
CANDLES—Mould, Tallow	℔ lb.	—	9	@	—	11
Sperm, Eastern and City		—	26	@	—	38
COTTON—From	℔ lb.	—	6½	@	—	10
COTTON BAGGING—American		—	12	@	—	13
CORDAGE—American	℔ lb.	—	11	@	—	12
DOMESTIC GOODS—Shirtings	℔ y.	—	5½	@	—	11
Sheetings		—	7	@	—	15
FEATHERS—American, live		—	25	@	—	32
FLAX—American		—	7½	@	—	7¾
FLOUR & MEAL—Genesee	℔ bbl.	4	56½	@	—	—
Troy		—	—	@	—	—
Michigan		4	50	@	—	—
Ohio, flat hoop		4	50	@	—	—
Ohio, Heywood & Venice		5	25	@	5	37½
Ohio, via New-Orleans		4	37½	@	4	50
Pennsylvania		4	50	@	4	62½
Brandywine		5	—	@	—	—
Georgetown		4	50	@	—	—
Baltimore City Mills		4	50	@	—	—
Richmond City Mills		6	—	@	6	25
Richmond Country		4	62½	@	—	—
Alexandria, Petersburg, &c.		4	50	@	—	—
Rye Flour		3	—	@	3	12½
Corn Meal, Jersey and Brand		3	25	@	3	50
Corn Meal, Brandywine	hhd.	—	—	@	16	—
GRAIN—Wheat, Western	℔ bush.	—	93	@	1	11
Wheat, Southern	new	—	90	@	—	95
Rye, Northern		—	66	@	—	67
Corn, Jersey and North	(meas.)	—	67	@	—	69
Corn, Southern	(measure)	—	60	@	—	—
Corn, Southern	(weight)	—	60	@	—	61
Oats, Northern		—	42	@	—	43
Oats, Southern		—	35	@	—	37
HAY—North River	bales	—	68	@	—	80
HEMP—American, dew-rotted	ton	80	—	@	100	—
" " water-rotted		120	—	@	170	—
HOPS—1st sort, 1845		—	20	@	—	25
IRON—American Pig, No. 1		35	—	@	37	—
" Common		25	—	@	30	—
LIME—Thomaston	℔ bbl.	—	75	@	—	—
LUMBER—Boards, N.R.,	℔ M. ft. clr.	35	—	@	40	—
Boards, Eastern Pine		11	—	@	13	—
Boards, Albany Pine	℔ pce.	—	10	@	—	19
Plank, Georgia Pine	℔ M. ft.	32	50	@	35	—
Staves, White Oak, pipe	℔ M.	50	—	@	—	—
Staves, White Oak, hhd		40	—	@	—	—
Staves, White Oak, bbl		30	—	@	—	—
Staves, Red Oak, hhd		25	—	@	—	—
Hoops		25	—	@	30	—
Scantling, Pine, Eastern		—	—	@	16	25
Scantling, Oak		30	—	@	35	—
Timber, Oak	℔ cubic foot	—	25	@	—	37
Timber, White Pine		—	18	@	—	25
Timber, Georgia Yellow Pine		—	20	@	—	22
Shingles, 18 in	℔ bunch	1	75	@	2	—
Shingles, Cedar, 3 feet, 1st quality		—	—	@	24	—
Shingles, Cedar, 3 feet, 2d quality		22	—	@	23	—
Shingles, Cedar, 2 feet, 1st quality		19	—	@	—	—
Shingles, Cedar, 2 feet, 2d quality		16	—	@	18	—
Shingles, Cypress, 2 feet		13	—	@	14	—
Shingles, Company		—	—	@	29	—
MUSTARD—American		—	16	@	—	31
NAILS—Wrought, 6d to 20d	℔ lb.	—	10	@	—	12½
Cut 4d to 40d		—	4	@	—	4½
PLASTER PARIS	℔ ton	—	—	@	3	—
PROVISIONS—Beef, Mess,	℔ bbl.	7	—	@	7	50
Beef, Prime,		5	—	@	—	—
Pork, Mess, Ohio		—	—	@	11	—
Pork, Prime, Ohio		8	75	@	8	87½
Lard, Ohio	℔ lb.	—	6	@	—	7
Hams, Pickled		—	4	@	—	5
Shoulders, Pickled		—	3½	@	—	4
Sides, Pickled		—	—	@	—	—
Beef, Smoked	℔ lb.	—	5½	@	—	6
Butter, Orange County		—	15	@	—	16
Butter, Western Dairy		—	10	@	—	14
Butter, grease		—	6½	@	—	7½
Cheese, in casks and boxes		—	7	@	—	8
SEEDS—Clover	℔ lb.	—	6½	@	—	8
Timothy	℔ tierce	10	—	@	15	—
Flax, Rough		9	—	@	—	—
SOAP—N. York, Brown	℔ lb.	—	4	@	—	6
TALLOW—American, Rendered		—	7	@	—	7½
TOBACCO—Virginia	@ lb.	—	3	@	—	6
North Carolina		—	3	@	—	5
Kentucky and Missouri		—	3	@	—	7
WOOL—Am. Saxony, Fleece,	℔ lb.	—	38	@	—	40
American Full Blood Merino		—	35	@	—	37
American ½ and ¾ Merino		—	29	@	—	32
American Native and ¼ Merino		—	26	@	—	28
Superfine, Pulled		—	28	@	—	30

Now publishing in Monthly Parts, in the FARMERS' LIBRARY,
Price **50** *cents each, or* **$5** *per annum,*

THE BOOK OF THE FARM:

BEING A SYSTEMATIC WORK ON

PRACTICAL AGRICULTURE,

ON AN ENTIRELY NEW AND ORIGINAL PLAN.

BY HENRY STEPHENS,

Editor of "The Quarterly Journal of Agriculture," and "Prize Essays and Transactions of the Highland and Agricultural Society of Scotland."

ILLUSTRATED WITH PORTRAITS OF ANIMALS,
PAINTED FROM THE LIFE—BEAUTIFULLY ENGRAVED; AND NUMEROUS WOODCUTS AND
PLATES OF AGRICULTURAL IMPLEMENTS,
So particularized as to enable Country Mechanics to construct them from the descriptions.

Of the style, costliness, and value of this celebrated work, some idea may be formed, when we state that, in the first place, it contains more than 1400 pages, with upward of SIX HUNDRED ENGRAVINGS! and, further, that in England it required more than two years to publish it, and cost there $24. This neat work is now publishing in the *Farmers' Library.* No farmer who thirsts for knowledge himself, or who aspires to have his son rise to the true "post of honor," the dignified station of an intellectual and accomplished agriculturist, can justifiably deny himself such a work as is found in the FARMERS' LIBRARY AND MONTHLY JOURNAL OF AGRICULTURE.

Among the Six Hundred Engravings which will be published in this BOOK OF THE FARM, we have only room to mention the following:—

Views of Farmsteads, or Farm Buildings; Fine Specimens of Cattle, Horses, Oxen, Swine, Cows, Sheep, &c.; Thrashing-Machines; Sowing-Machines; Grubbers; The Farm-House; Servant's Houses; Fences; Thorn Hedges; Field Gates; Stone Dykes; Embankments; Draining—an Open Drain in Grass: Covered do.; Planks and Wedges to prevent Sides of Drains falling in, &c., &c., &c. AGRICULTURAL IMPLEMENTS of all kinds; Various Kinds of Plows: Sections and Parts of do.; Shovels; Scoops; Spades; Plumb-Level; Swing-Trees for two Horses, for three Horses, for four Horses; Harrows; Horse-Hoes; Rollers; Straw-Racks; Water-Troughs; Straw-Cutters; Shepherd's Crook; Snow Plow; Dung-Hawk; Scythe and Bend Sned; Bull's Ring; Bullock Holder; Rakes Form of Haystacks; Corn-Bruisers; Riddles; Rope-Spinners; Ladders; Bean-Mill; Instrument for Topping Turneps; Turnep-Trough for Feeding Sheep; Movable Shed for Sheep; Oil-Cake Breaker; Wheelbarrow; Turnep Slicer for Sheep; Pricking for relieving Cattle of Choking; the Milking-Pail; Curd-Cutter; Cheese-Vat; Churns; Cheese-Press; &c., &c. Horse-Cart; Liquid-Manure Cart; Single-horse Tilt-Cart, &c., &c., &c. Various Operations connected with the Culture of Grain &c., &c., &c. Also, Plans for Irrigation; Insects affecting Live Stock and Crops; Harness, Bridle-Bit, Collars, &c., &c., &c., &c.

☞ This great Work is now publishing in the FARMERS' LIBRARY AND MONTHLY JOURNAL OF AGRICULTURE, the subscription price of which is $5 per annum. Every farmer, and every gentleman who owns land or cultivates a garden, is earnestly requested to examine this Work.

GREELEY & McELRATH, *Publishers.*

NEW YORK, *July* 1, 1846.

STEPHENS'S BOOK OF THE FARM.

Extracts from the Critical Notices published in England during the publication of the work in London.

From the London Times.

"The first part or number of this work has just been published by Messrs. Blackwood. It is written by Mr. Henry Stephens, a gentleman already known to the public in his editorial character in the Quarterly Journal of Agriculture. The great merit of the work, as far as it has yet gone, is the intelligible manner in which it is written, and the strong good sense with which it is distinguished. The proposed arrangement, set forth in the plan of the work, is clear and satisfactory; and the whole number is valuable as being the result of practical experience and competent theoretic knowledge. It is a book which will be received with gratitude by those who are really anxious to profit by instruction, and whose anxiety for improvement is not impeded by prejudice." . . . "The plan of the work, it may again be observed, is very good—the reasoning is logical—the assertions are the results of accurate examination and repeated experience. In addition to the information conveyed in the letter-press, the book is ornamented by accurate and handsome plates of agricultural animals, implements of farming, plans of farming, &c. &c."

From the Newcastle Courant.

"Mr. Stephens's work is divided into three portions. In the first, the pupil is shown the difficulties he has to encounter in acquiring a competent knowledge of farming as a profession, and the most easy and effectual methods of overcoming these. The second portion details the various kinds of farming practiced in the country, and points out that which the Author reckons the best for adoption under given circumstances.—The third and concluding portion accompanies the young farmer into the world, where it acquaints him how to look about for a proper farm for himself."

From Felix Farley's Bristol Journal.

"When we say that the Author is Mr. Henry Stephens, we are safe in expressing our conviction that the results of his penetration, judgment, and experience, so placed before the public, will confer an advantage on the agricultural interest of no common order. We therefore predict a large measure of success to the intended work."

From The Argus.

"We regard it as a national work; and, from the masterly manner in which Mr. Stephens handles his subjects, we feel assured it must become a standard one. His thorough practical knowledge, backed by his scientific acquirements, makes the Author's fitness for the task conspicuous; and the unpresuming manner in which his talent is displayed enhances its value still more in our eyes."

From the Midland Counties Herald.

"The entirely practical nature of this work, and the evident care with which it is produced, will, we think, render it one of the most useful publications for the farmer which has yet appeared."

From The Times.

"The great merit of the work, as far as it has yet gone, is the intelligible manner in which it is written, and the strong good sense with which it is distinguished. It is a book which will be received with gratitude by those who are really anxious to profit by instruction, and whose anxiety for improvement is not impeded by prejudice.

From the Birmingham Advertiser.

"The farmers of England would do well to possess themselves of this work, for the variety of useful information, and the many practical suggestions it contains."

From The Britannia.

"The two parts now before us are models of clear, sensible composition, and form such an introduction to the practice of farming as has never been published before. The author brings to his task a large store of knowledge, sound sense and a lucid style." "We are quite sure that never was any work more called for, by the intelligence of the age than this 'Book of the Farm,' and believe that it could not have been entrusted to more competent hands, or produced in better style. We strongly recommend it to all classes of agriculturists as a publication of decided utility, and likely to be most serviceable to them in the successful prosecution of their labors."

From the Sporting Review.

"The work before us is one of the most practical results of so patriotic a spirit. It is a most welcome addition to our rural literature. As it proceeds, we hope to transfer some of its good things to our pages.

From the New Farmers' Journal.

"On all these important points, no one is better qualified to fill the office of a mentor than Mr. Stephens, of which the well-arranged plan, and judicious execution, of the book before us, afford irrefragable testimony."

The Concluding Paragraph.

Mr. Stephens, the Author of the above named work, was engaged for several years in writing it. Its publication was commenced in London in January, 1842, and concluded in August, 1844. The Author closes the work in the following words:

"I have now brought to a termination the task I had imposed upon myself in writing this work. If you will but follow the prescriptions I have given in it, for conducting the larger operations of the field, and for treating the various animals of the farm; and—not to mention the proper plowing and manuring of the soil—as the practice of every farmer demonstrates the necessity of affording due attention to those most important because fundamental operations, if you finish off your fields in a manner indicating care and neatness—plowing round their margins, and turning over the corners; if you keep your fences clean and in a state of repair—your fields free of weeds; if you give your stock abundance of fresh food at regular intervals in winter, and supply them with plenty of clean water on fresh pastures in summer; if you have the farm roads always in a serviceable state, and everything about the steading neat and orderly; if you exhibit skill and taste in all these matters, and put what is called *a fine skin* on your farm, you will not fail to earn for yourself the appellation of a good and exemplary farmer: and when you have everything about you 'thus well disposed,' you will find, with Hesiod of old, that profitably, as well as creditably, for you 'shall glide away thy rustic year.'"

HYDRAULICS AND MECHANICS.

A Descriptive and Historical Account of Hydraulic and other Machines for raising Water, ancient and modern; with observations on various subjects connected with the Mechanic Arts, including the Progressive Development of the Steam-Engine. Descriptions of every variety of Bellows, Piston, and Rotary Pumps, Fire-Engines, Water-Rams, Pressure-Engines, Air-Machines, Eolipiles, &c. Remarks on Ancient Wells, Air-Beds, Cog-Wheels, Blowpipes, Bellows of various People, Magic Goblets, Steam Idols, and other Machinery of Ancient Temples. To which are added Experiments on Blowing and Spouting Tubes, and other original Devices. Nature's Modes and Machinery for raising Water. Historical Notices respecting Siphons, Fountains, Water Organs, Clepsydræ, Pipes, Valves, Cocks, &c. In Five Books.

BY THOMAS EWBANK.

ILLUSTRATED BY 300 ENGRAVINGS.

This volume, on the various machinery connected with the raising of water, is a very interesting production; not only to the Experimental Philosopher, the Mechanician, and the Operative Tradesman, who are engaged in the researches and work combined with the objects specified in the Treatise, but also to every ordinary reader who is solicitous to enlarge his general information, and who wishes to combine amusement with the topics which attract his attention.

It is impossible in this concise notice, to detail a minute syllabus of a book, the mere topical index of the contents of which occupies nearly eight pages, numbering about one thousand distinct articles; but a general view is presented, from which the nature and value of the dissertation can easily and correctly be estimated.

The *first* book, which is subdivided into *eighteen* chapters, comprises a narrative of the various "Primitive and Ancient Devices for Raising Water," which are exemplified by sixty-seven engraved specimens of their diversified contrivances. This is not merely a dry philosophical comment, for there are many episodes commingled with it of a peculiarly interesting character, of which the preliminary remarks on the historical accounts of warriors, and the section in chapter sixteen, on the "Flattery of Despots by Men of Science," may distinctly be mentioned.

The *second* book, which includes *seven* chapters, describes the "Machines for Raising Water by the Pressure of the Atmosphere." With this part are incorporated thirty engravings, delineating the chief inventions which have been used in that department.

The *third* book, containing *nine* chapters, develops the "Mechanics for Raising Water by Compressure, independently of Atmospheric Influence," with sixty-nine pictorial representations of bellows, pumps, and fire-engines. The discussions respecting water-works and fire-engines are full of instruction, and combine more information upon those important topics than can be found, it is believed, in any other work that ever has been published.

The *fourth* book is extended to *nine* chapters, and displays the "Machines for Raising Water, chiefly of Modern Origin, including Early Applications of Steam for that Purpose," with thirty-one engravings. This portion of the volume is very racy, especially the details concerning the Altars and Heron's Spiritalia, with the introductory paragraphs to chapter three, from page 381 to 391, and the notice of the Eolipilic Idols.

The *fifth* book, which also comprises *nine* chapters, with eighty-four engravings, unfolds the "Novel Devices for Raising Water, with an Account of Siphons, Cocks, Valves, Clepsydræ," &c., the seventh chapter of which, on Fountains, condenses a large quantum of information upon that cooling and refreshing topic, which is followed by an attractive elucidation of hydraulic organs.

An Appendix, with five engravings, supplies some additional explanatory facts; and to the whole is subjoined a comprehensive index of all the principal subjects that are embodied in those pages.

In addition to the above, the present edition contains a *Supplement* of over *thirty* pages, on ANCIENT EOLIPILES, with some curious illustrations.

The entire work, with an Illustrated Titlepage, will cost but *half the price* of the previous editions.

☞ The above work is now publishing in EIGHT PARTS or numbers, at 25 cents each. GREELEY & McELRATH, Publishers,
Tribune Buildings, New York.

EWBANK'S HYDRAULICS AND MECHANICS.

OPINIONS OF THE PRESS.

This is a highly valuable production, replete with novelty and interest, and adapted to gratify equally the historian, the philosopher, and the mechanician, being the result of a protracted and extensive research among the arcana of historical and scientific literature. Mr. EWBANK's work can not be too widely circulated. It is an elegant "*Table-Book*," suitable to all persons—to the ordinary reader, who is anxious to acquire useful knowledge, as well as to the theoretical and practical connoisseur in hydraulics. Hundreds of impressive biographical and historical anecdotes, generally unknown, might be quoted as proofs of the multifarious intelligence which Mr. Ewbank has amassed for the edification of those who may study his richly-entertaining volume. We know not a compilation specifically designed to exhibit that mechanical philosophy which appertains to common, domestic, and social life, with the public weal, to which the attention of youth can be directed with equal amusement and beneficial illumination as to Mr. Ewbank's acceptable disquisitions. Therefore we earnestly recommend his volume to their study in preference to the perusal of those fantastic and pernicious fictions which pervert the imagination, and deteriorate the mind, and corrupt the morals of the thoughtless myriads who "*feed on those ashes.*"—*National Intelligencer.*

It throws more light upon the progress of mankind from the earliest ages, in the useful arts, than any volume we have ever seen.—*Alexander's Messenger.*

The only volume ever published embracing an account of all the contrivances employed in different ages by different people for raising water. It is really one of the most remarkable publications connected with mechanical philosophy that has ever fallen under our observation.—*Merchants' Magazine.*

We have long known that Mr. Ewbank was preparing this work for the press, and have looked for its publication with a conviction that we should derive much valuable information from its perusal; an expectation that has been fully justified by the result. His work is not one which can fall still-born from the press, as it is not one of those ephemeral productions that must sell at the moment or never.—*Journal of the Franklin Institute.*

An interesting work of science. The title will furnish the reader a good general notion of the matter of the book, but not of the clearness, method, precision, and ease of the manner of it. We believe there is no work extant which treats of the specific topics which he has chosen—none we are certain which describes it with more fullness of argument and illustration.—*Democratic Review.*

All classes, as well the farmer and professional man as the artist and engineer, will rise from a careful perusal of Mr. Ewbank's book wiser and better.—*U. S. Monthly Review.*

It contains more valuable, curious, and interesting information than can be found in any volume ever published on the subject, and is a work which commands the attention, and should be placed upon the shelf, of every gentleman's library, and in every college and academy.—*N. Y. Sun.*

A splendid book. We are inclined to believe that it will be one of the most curious and interesting works that have issued from the American press for many years.—*N. Y. Tribune.*

It possesses great interest, not only for mechanicians, engineers, and men of science, but for intelligent readers generally.—*Philadelphia Enquirer & National Gazette.*

A rich mine for exploration by the practical or theoretical engineer, as well as by those who like to make themselves acquainted with the developments of mechanical ingenuity.—*N. Y. Commercial Advertiser.*

This large and beautifully-printed octavo is probably the most valuable volume that the publishers have presented to the public during the past year.—*N. Y. Courier & Enquirer.*

It is a scientific work, but commends itself not to the scholar only, but to the mechanic and general reader, for it is perfectly free from pedantry and learned affectation.—*Boston Daily Times.*

An Encyclopedia of mechanics. It is richly illustrated, full of curious information, and every way worthy, by its copious knowledge and its incentives to curiosity, not only to a place in every gentleman's library, but what is more, to one on the shelves of every district school library in the state.—*Union.*

A thick volume of nearly 600 pages; but let no reader be dismayed by its size, for the author says with a good deal of truth, that in the annals of mechanics are to be found incidents as agreeable and exciting in their nature as anything that can be realized by the imagination. We are not sure that a single corner of the world, or recess of history, has escaped his laborious researches.—*N. Y. Evening Post.*

Whoever rejects this book from the supposition that it is a dull detail of machinery and the various applications of the mechanic powers, will be guilty of great injustice to the author. It is one of the most entertaining books we have ever met with, on a scientific subject. It is full of interesting historical and well-written descriptive matter, interspersed with appropriate quotations from old writers, enough almost to give it the title of THE POETRY OF MECHANICS.—*Boston Courier.*

One of the most valuable scientific works which this country has produced.—*Albany Advertiser.*

It entitles him (the author) to take rank at once with the very best writers in this department of literature, whether ancient or modern. Quite as entertaining as Beckman, he exceeds him immeasurably in practical usefulness; and while aiming, like Ferguson, at a popular style, he brings to his aid a liveliness of fancy, depth of feeling, and eloquence of expression, to which Ferguson was a stranger. We have seldom seen a volume so absolutely *crammed* with useful information.—*London Mechanics' Magazine.*

A compressed library. On the subject here treated, tomes have been multiplied to an amazing extent. Their essence is given in this volume. In short, it is such a work of labor and original research as we rarely see. It is an acceptable contribution to the *literature* of mechanical science and practical engineering. It is the kind of book which every mechanic or inventor ought to consult.—*London Athenæum.*

This work is eminently entitled to be called a history of the human race, since it carries us forward from one stage of advancing civilization, beginning with the rudest and most simple efforts of ingenuity, to the almost immeasurably superior wonders of our own day. . . . Whether viewed as a purely philosophical work, or as a comprehensive text book for mechanics and inventors, Mr. Ewbank's book is equally valuable. The mass of information it contains is unusually great, and the immense variety of machines which it describes are illustrated with about 300 engravings. It is capable of saving infinite trouble and mortification to inventors. . . . We have seldom seen a more instructive and amusing work.—*From the Surveyor, Engineer, and Architect's Journal.*

This work exhibits the results of reading and research seldom manifested in these days of book-making. . . Description, however, unless as copious as an index, would fail to afford an idea of its extent and value.—*London Literary Gazette.*

☞ **The above valuable work is now publishing in EIGHT PARTS, and sold at 25 Cents each.**

GREELEY & McELRATH, Tribune Buildings, Publishers.